



# Biometrics for Criminal Investigation

Identify unknown suspects instantly using latent fingerprints, palm prints, or faces captured from videos or photos







While searching for a bigger vision, we have realised that we might be a tech company, but in the end, our product is very human. It's trust between people. Trust that – thanks to biometrics – can be achieved like never before. Instantly. And that's what we want to build. A world where nobody needs to be frisked, wait for paperwork, or confirm who they are. A world of instant trust.

Jan Lunter  
Innovatrics Founder



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# We are an independent provider of trusted biometric solutions for governments and enterprises.



1 Billion+ Enrollees



NIST Top-ranked biometric algorithms



20 years on the biometric market



600+ Large Scale Projects



80+ Countries



200+ People

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# Powerful Biometric Engine



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Innovatrics' standard-compliant ABIS enables the quick and accurate search for a match in a database of millions of fingerprints, faces and irises.

- Leading NIST benchmarks algorithms (MINEX, ELFT, PFT, IREX, FRVT)
- High Scalability for both central criminal registers or local departments
- High Availability & Interoperability
- Workflows for criminal investigation
- Web-Based or User Interface

# Biometrics

Our solutions are certified and ranked in top positions for almost all independent certification and benchmark initiatives within the field of biometrics.

## Fingerprint

Top Performer  
ELFT



**NIST**

Top Performer  
PFT III



**NIST**

Top Performer  
MINEX III



**NIST**

Top Performer  
FpVTE



**NIST**

Fingerprint Image Compression  
Encoder / Decoder Certification  
FBI WSQ, 2019



## Face

Top Commercial Performer  
FRTE



**NIST**

DHS Biometric  
Technology Rally



Science and Technology

## Iris

Top Performer  
IREX 10



**NIST**

## Liveness

iBeta Presentation Attack Detection  
Conformance Level 1&2



**iBeta**

## Aadhaar ecosystem

Certification  
STQC



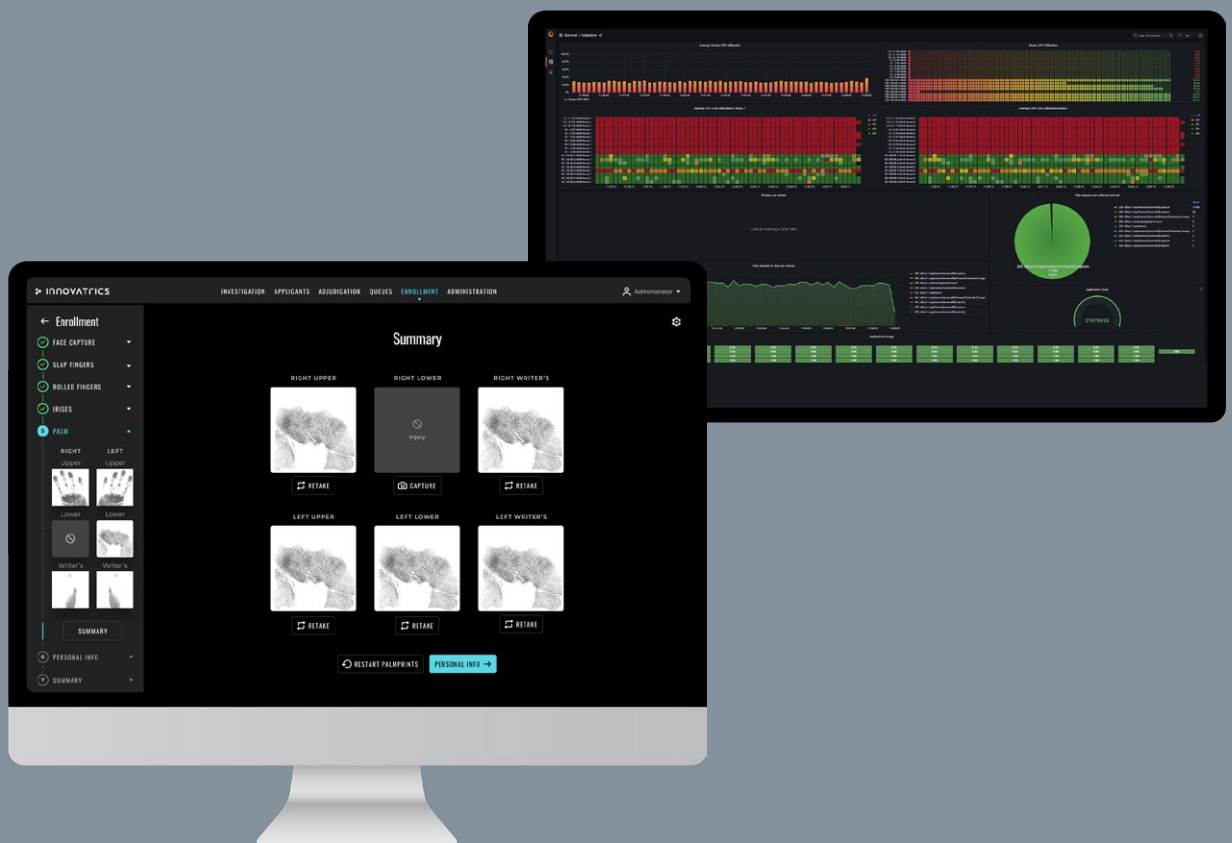
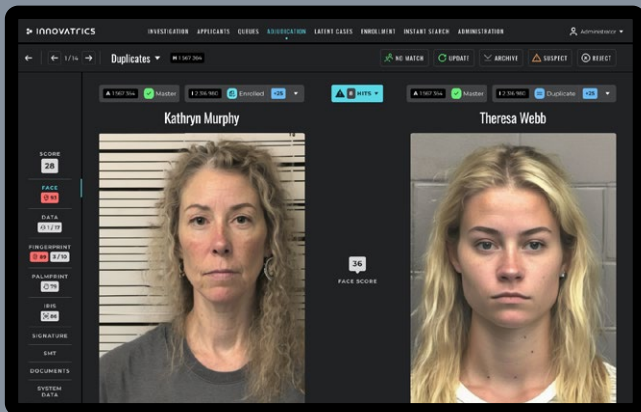
# Intuitive User Interface

Our ABIS has a browser-based user interface for biometric evidence analysis, identification, case management, system monitoring, and administration.

The operator or forensic expert can review biometric enrollment data, perform side by side analysis of probe and candidate, and apply a decision logic according to the workflow.

Our ABIS system administration interface makes it easy for admins to set up biometric identity system rules and thresholds, enrollment options, workflows, users, etc.

The system also allows for the monitoring of any activity using audit logs and action tracking.





# Strong Partnership

A dedicated, experienced solution manager, alongside a project manager and delivery engineer, are assigned to each respective ABIS project.



Guinea  
2019



Brazil  
2021



Philippines  
2020

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# ABIS for Criminal Investigation

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Innovatrics' Criminal Investigation Solution is designed to instantly and accurately identify unknown criminals or suspects based on latent fingerprints, palm prints, or faces captured from videos or photos.

Our integrated criminal case management helps you organize captured fingerprints or videos from a crime scene. It is optimized for biometric experts of forensic crime labs and comes with a custom setup and special training.





*We are happy to recommend Innovatrics to customers or partners who require an AFIS/ABIS for their projects, particularly in the field of identification. The solution meets all of the initial requirements of INAFIS and the Indonesian National Police, where it is scalable for future needs.*

Drs. Agus Irianto, S.H., M.H., M.Si, Ph.D, Police Senior Superintendent, Indonesian National Police

## Evidence Analysis

### Fingerprint



IMAGE  
NORMALIZATION



MINUTIAE  
DETECTION



LATENT PRINT  
EDITOR



CRIMINAL  
ENROLLMENT

CASE  
MANAGEMENT

## Data



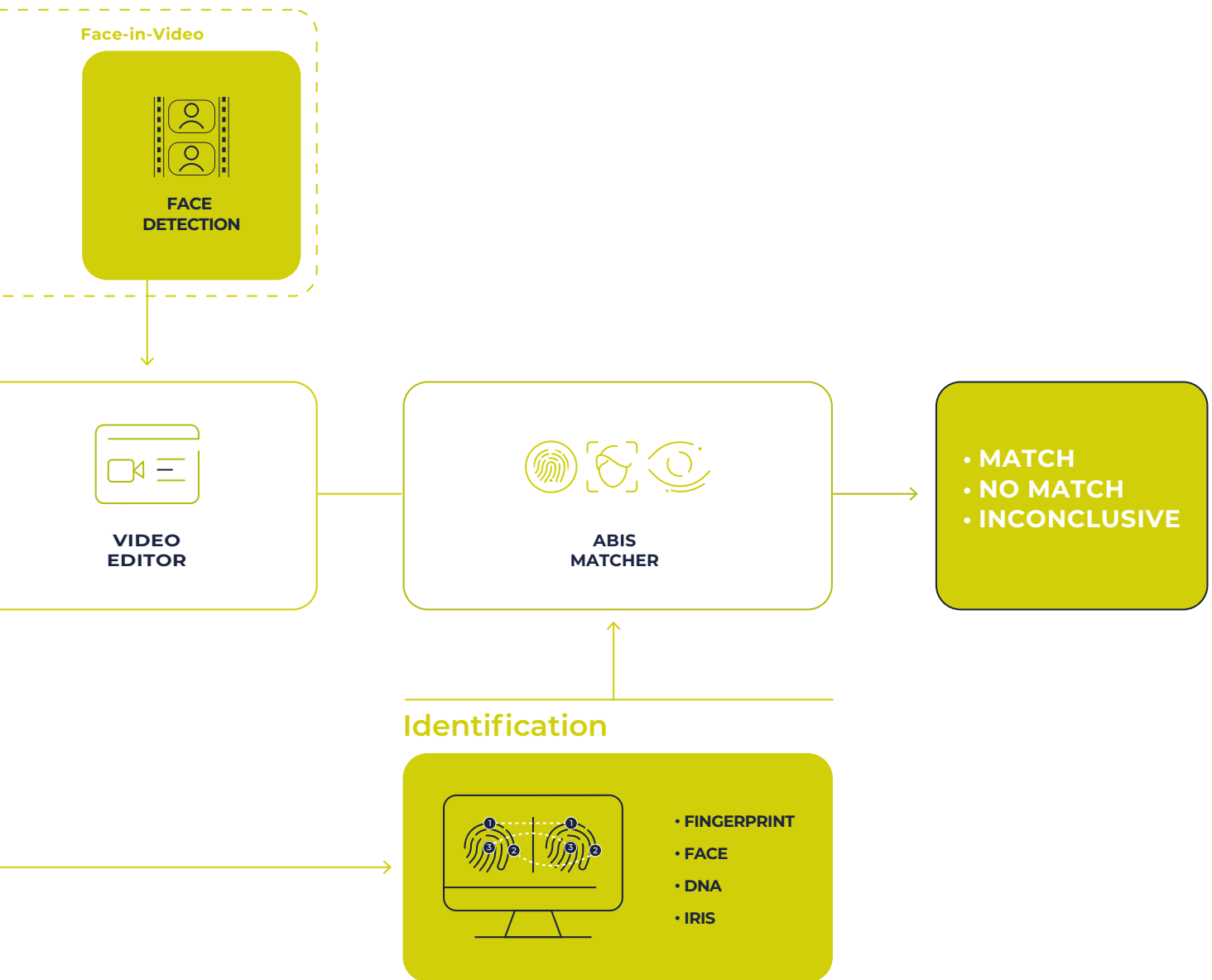
### SUSPECT

- ✓ Rolled Fingerprints
- ✓ Palmprints
- ✓ Face
- ✓ Irises
- ✓ Scars, Marks, Tattoos
- ✓ Demographic data
- ✓ DNA



### EVIDENCE

- ✓ Latent prints
- ✓ Video Evidence
- ✓ DNA
- ✓ Other



## Complete Solution for Criminal Investigation

Innovatrics' standard-compliant and high-performance automated biometric identification software enables the quick and accurate search for a match in a database of millions of fingerprint, face, or iris records in a fraction of a second.



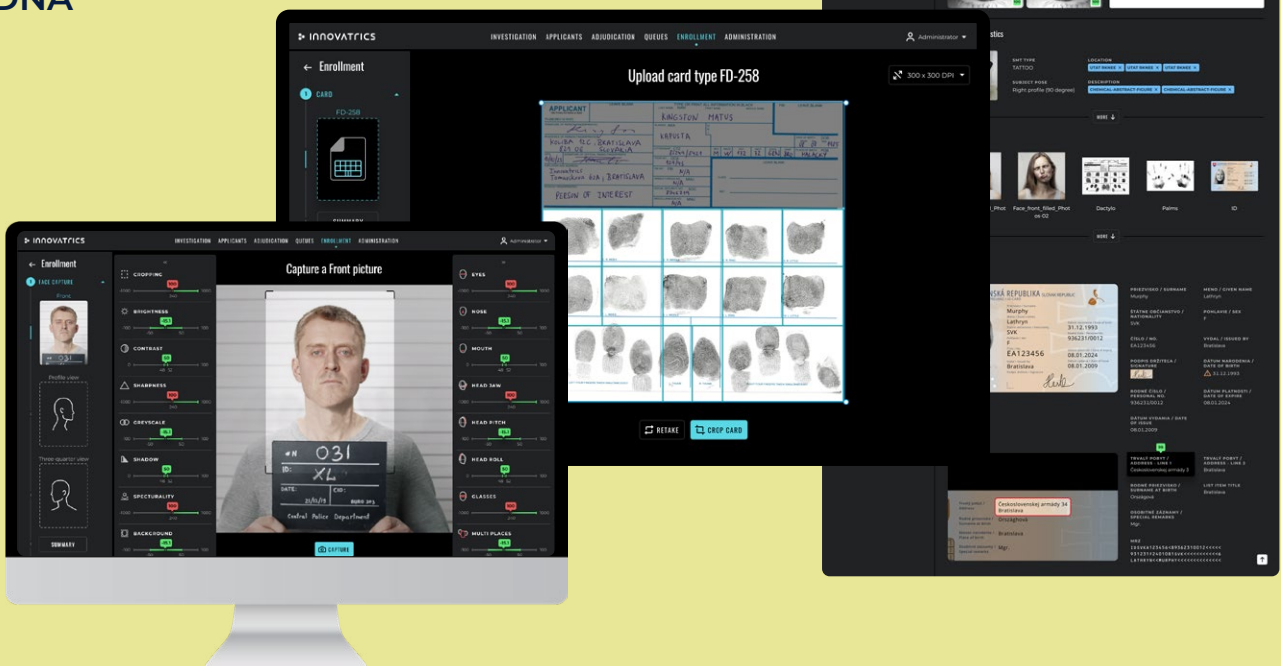
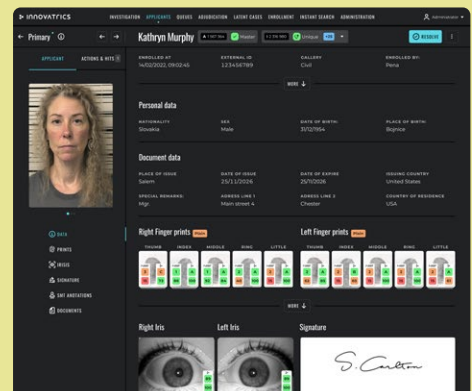
# Criminal Suspect Booking

Innovatrics ABIS for criminal investigation provides a step-by-step guide to law enforcement agents through criminal suspect booking.

- Support for a wide range of biometric devices and scanners
- Enrollment application for web browsers or Android devices
- Evaluation of the quality of collected biometric data (ICAO, NFIQ, etc.) in real time

Suspect profile includes:

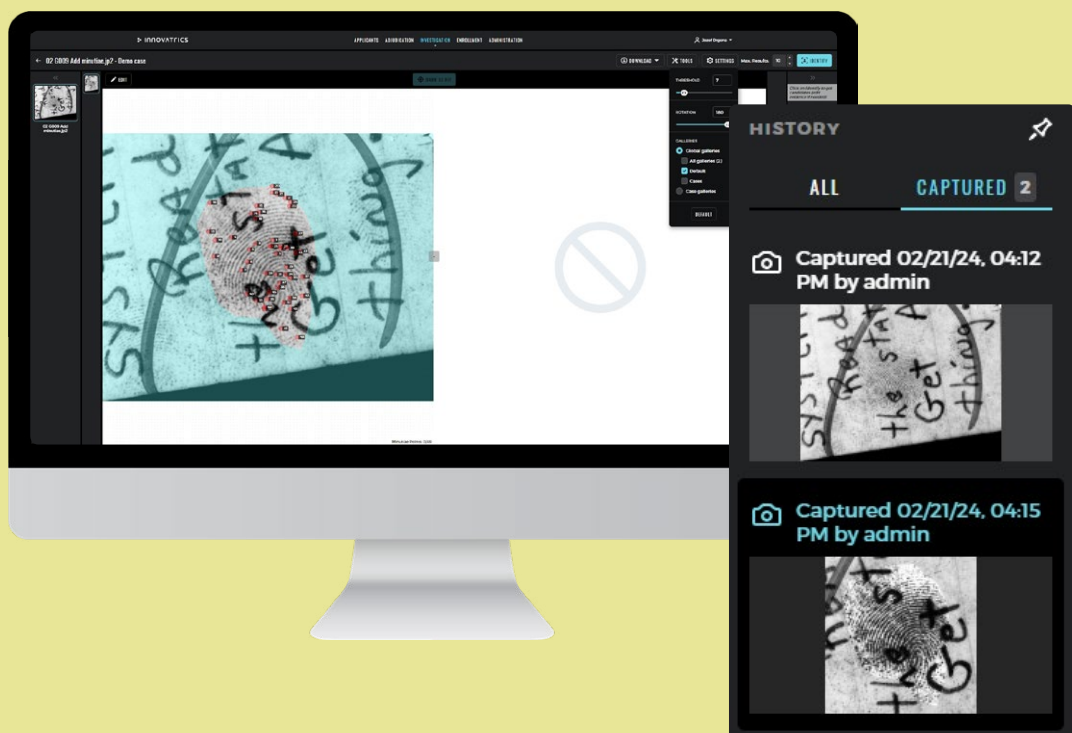
- Rolled fingerprints
- Palmprints
- Face
- Iris
- SMT (scars, marks, tattoos)
- Demographic data
- DNA



# Biometric Evidence Analysis

Innovatrics ABIS provides support for activities related to pre- and post-processing of biometric evidence for the better performance of biometric identification and for court exhibit creation.

- Latent print image normalization (DPI, Perspective, Flip, Rotate, Crop)
- Adjustments to highlight ridges of latent prints (Grayscale, Brightness and Contrast, Gamma Correction, Histogram Equalization, Color Temperature, Invert Image, Blur)
- Visual annotations of significant marks
- Minutiae points detection and adjustment



# Suspect Identification: Latent prints

Innovatrics fingerprint matching supports latent-to-plain, latent-to-rolled, latent-to-palm and latent-to-latent matching modes. The uncovered candidates can be displayed in the adjudicator.

- Latent & Palm Print Matching
- Side-by-side comparison tool
- Adjustable parameters of the search for a given use case (Speed, Threshold, Rotation, Number of Candidates)
- List of candidates from the reference database ordered by identification score
- Visual Audit for Expert Adjudication

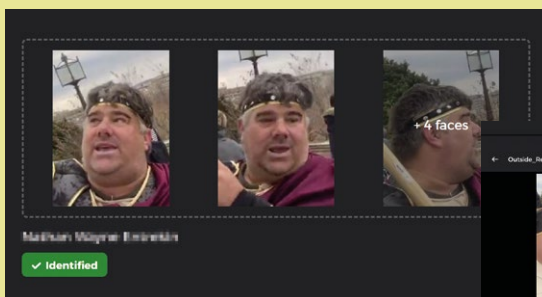
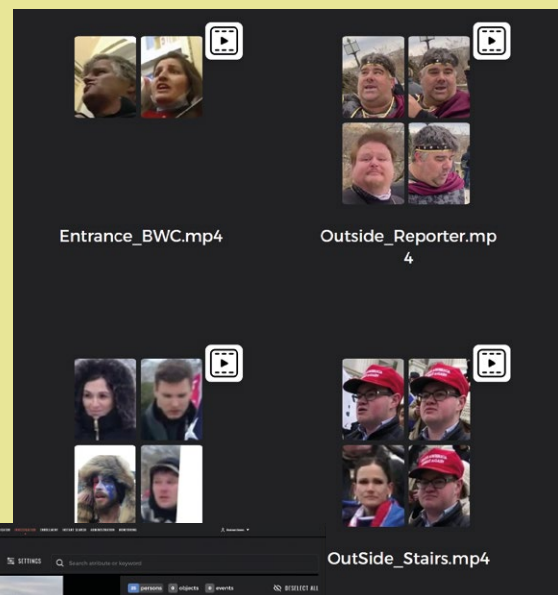




# Face-in-Video Identification

Accelerate post-event investigations based on facial biometrics with faster than real-time face-in-video identification in the adjudicator.

- Video Management System for Criminal Investigation
- Up to 25 times faster than the actual length of an uploaded video
- Automatic video annotations
- Identification against the database of previously enrolled identities
- Manual annotations of objects and events in the videos



# Suspect Identification in Field

Our intuitive application can collect high-quality biometric data from a single portable device instead of using 3 different peripheral scanners. It is integrated with the Innovatrics ABIS engine in order to perform matching across the entire database from mobile devices.

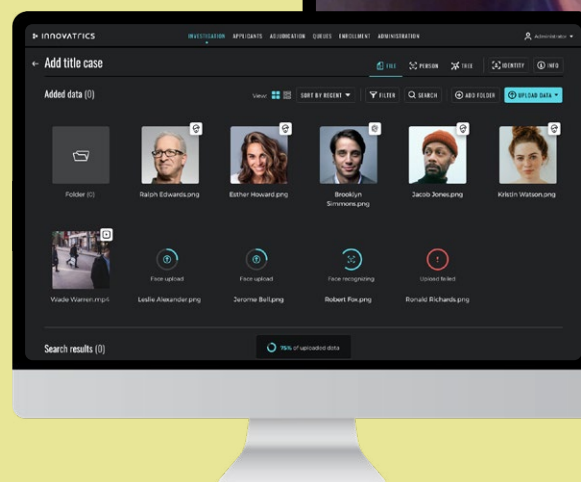
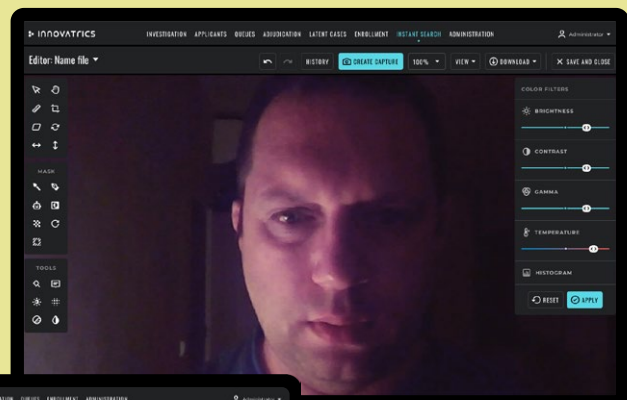
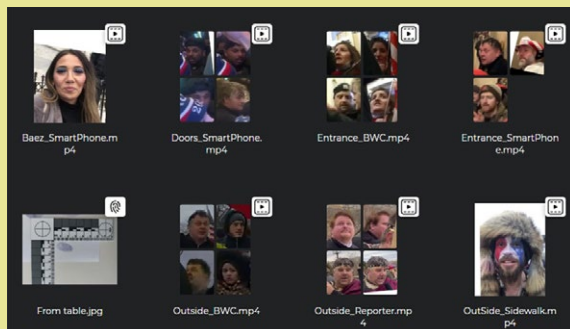
- Available for Android & Windows
- The collected data is transferred directly into Innovatrics ABIS for identification using REST API call
- App can operate encrypted data online or offline, on local storage, to keep it safe from unauthorized access



# Criminal Case Management

Innovatrics ABIS for criminal investigation helps keep evidence grouped into cases and be organized.

- Personal biometric information: fingerprints, latent prints, face photo, or video sequences
- Non-biometric information: SMT (scars, marks, tattoos), face characteristics, body characteristics, or other images related to the case
- Each piece of evidence has further details of information customizable according to the local legal framework
- Information about evidence upload, metadata, personal characteristics, history of performed biometric identifications and hits
- Reveals connections between different unresolved cases





# References



## Indonesia

*Criminal investigation*

- 180 million records
- Over 3 000 stations
- 3 modalities



## Brazil

*Document issuance, Criminal investigation*

- 8 million records
- Autoresolution script for duplicates
- Complete Solution with End-to-End Support



## Guinea

*Criminal investigation*

- 0.5 million records
- Digitizing paper fingerprint cards
- Complete Solution with End-to-End Support

# Our Offices Across the Globe



## America

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- USA
- Brazil

## Europe

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- R&D Czechia
- HQ Slovakia

## Asia

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- Taiwan
- Singapore

## About us

We are an independent EU-based provider of multimodal biometric solutions. Our algorithms consistently rank among the fastest and most accurate in fingerprint and face recognition. Since 2004, we have partnered with all types of organisations to build trusted and flexible biometric identification solutions. Our products are being used in more than 80 countries, benefitting more than a billion people worldwide.

Get in touch if you would like to find out more about us or ask us a question, by calling or emailing us.

## Contact

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