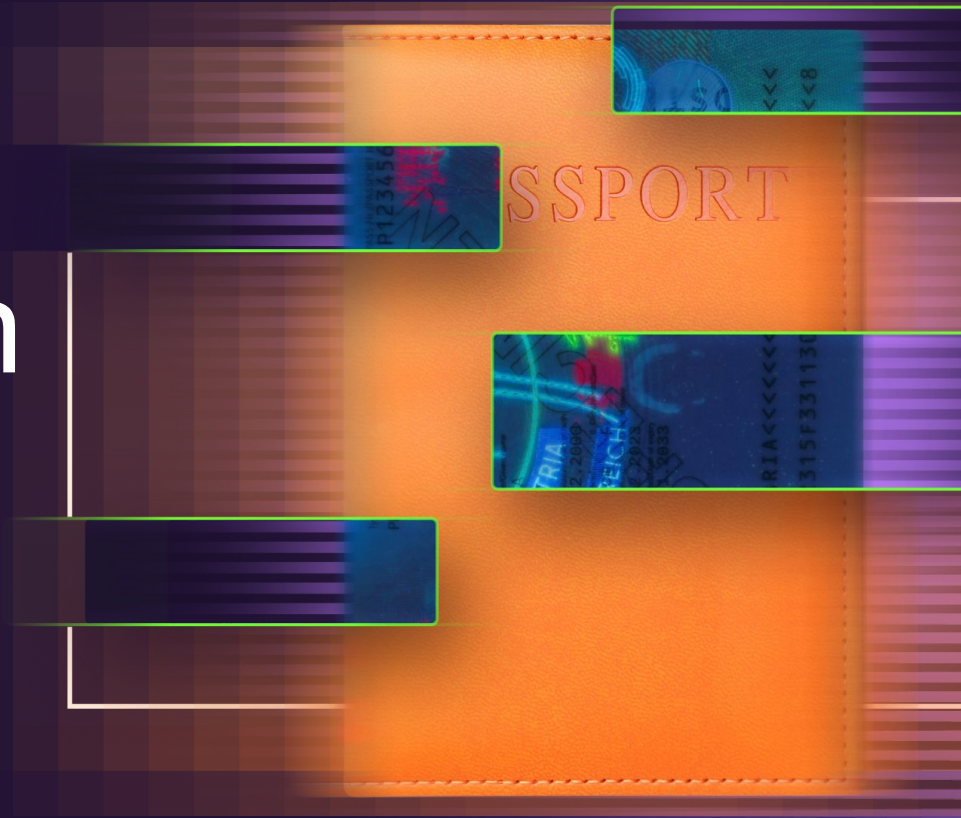
Regula

From Suspicion to Decision

Practical document and identity fraud detection





Name/Surname

Carmen Swanson

Business role

Past President, IAATI

25 years of experience in combating vehicle crime, fraud, trafficking, and cross-border organized crime.



Name/Surname

Andrei Dumski

Business role

Principal Forensic Expert, Regula

Document examination, field training, author of coursebooks and over 50 training manuals and expert articles.



Name/Surname

Andrey Terekhin

Business role

Head of Product, Regula

Biometric products, transforming data-intensive IDV products into intuitive user experiences.

TODAY'S SESSION

From first-line inspection to forensic examination



1

Rapid screening

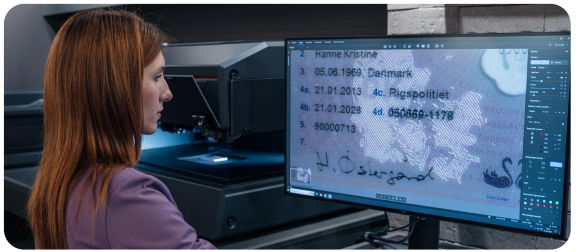
- Overt security features
- Sight, touch and movement
- Quick field assessment



2

Enhanced examination

- Magnification and multiple light sources
- Semi-covert security features



3

Forensic examination

- Special equipment and trained experts
- Spectral analysis
- Evidence-based expert conclusion

At each checkpoint we ask: clear it, escalate it, or collect deeper evidence?

1

Rapid screening

What can the document reveal in seconds?

FEEL

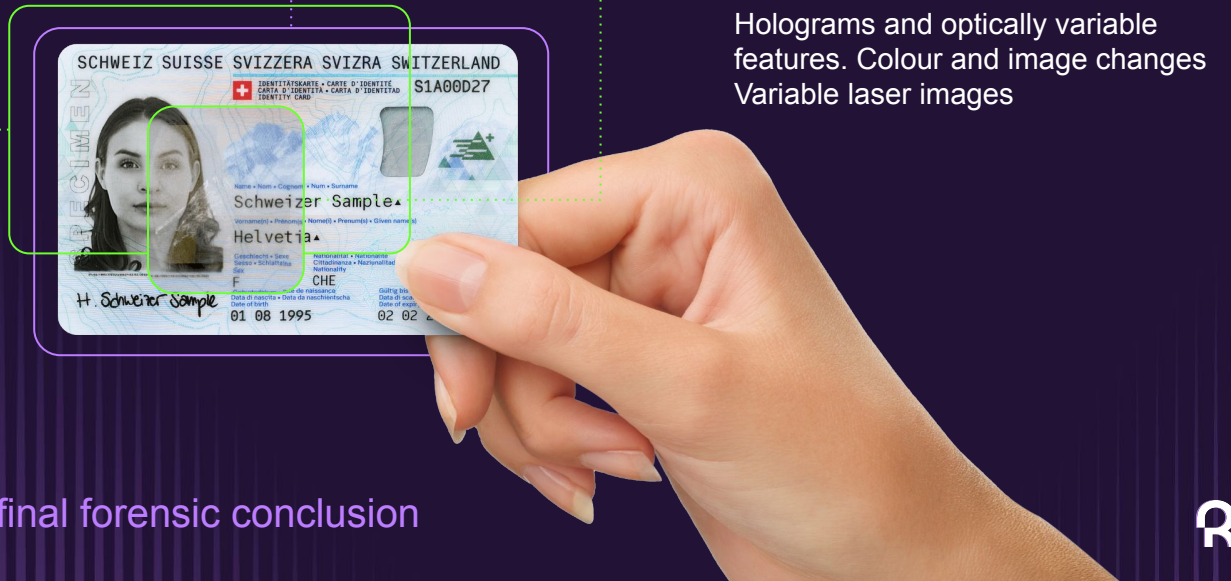
Document material and thickness
Raised printing and tactile engraving.
Surface damage or physical alteration

LOOK

Portrait compared with the Holder Validity and personal data. Document layout and visible signs of alteration

TILT

Holograms and optically variable features. Colour and image changes
Variable laser images



The goal here is triage, not a final forensic conclusion

Holograms


DE
L01XV02Z2
L01XV02Z2
MUSTERMANN
055674
055674
MUSTERMANN<<ERIKA


3.
4(a).
4(b).
5.
7.

Multiple Laser Image / Changeable Laser Image (MLI / CLI)





Passport of the Kingdom of Saudi Arabia, 2020

A composite image which consists of several initial images. Depending on the angle of observation, one or the other initial image is visible.

Diffractive Identification Element (DID)



This security feature changes its color when rotating the image by 90°.

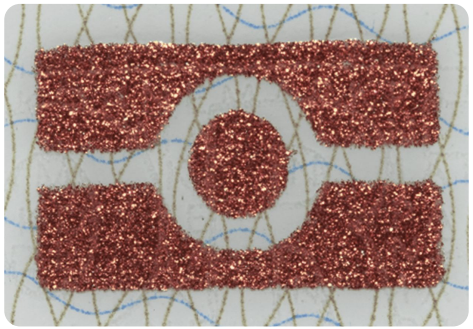


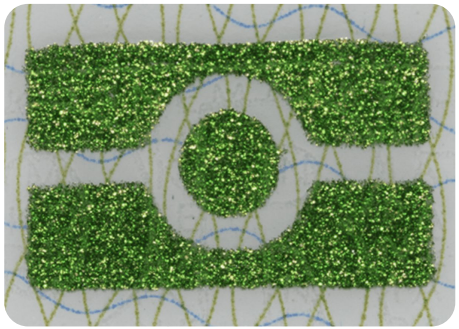


French passport first issued in 2019

Optically variable ink (OVI)







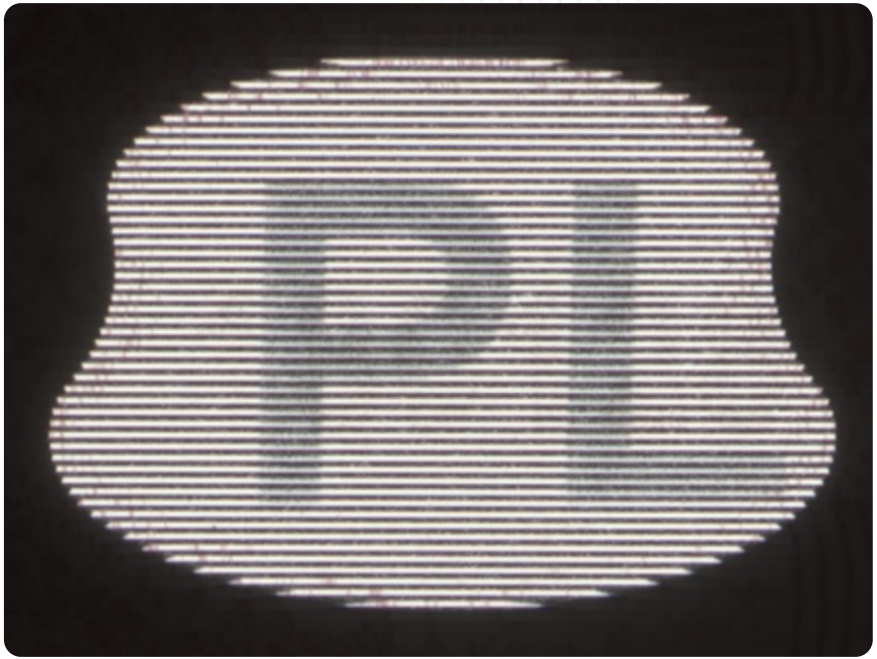
Optically variable ink in a Danish passport shows a visible color shift when the document is tilted.

Danish passport issued in 2021

Transparent / Clear Window



Polish driving license



A transparent non-printed area in the substrate. It is used as a filter for visualizing latent scrambled images when a secondary holder's image is applied to the adjacent page. This feature protects a security document against illegal copying / scanning.

2

Enhanced examination

Regula 1031

First line examination



Compact professional device designed for reliable document and banknote examination in operational and forensic environments.

- Up to 24× optical magnification
- Incident, oblique, coaxial, OVD white
- Ultraviolet illumination
- Infrared illumination
- Anti-stokes excitation
- UV and White Torch
- RFID reader to detect and identify type of RFID tag

Regula 1031

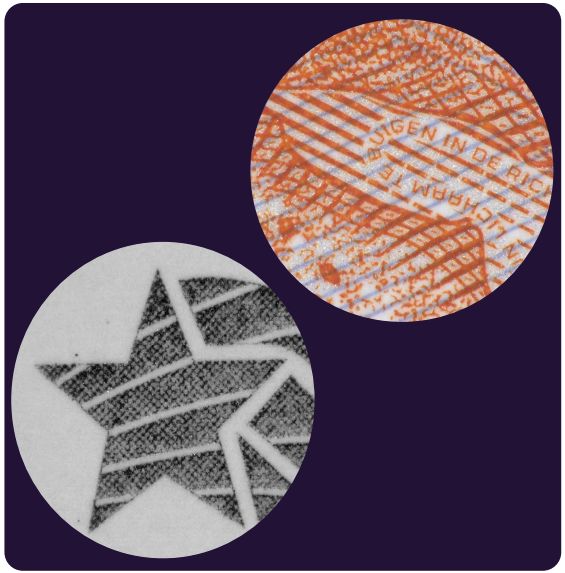
First line examination

Magnification and illumination modes

White incident light
Fine print and printing patterns



White oblique light
Surface relief and printing structure



White light for OVD visualization
Optically variable elements



Regula 1031

First line examination



Regula 1031

First line examination



Regula 4125

First line examination

Seamless and immediate: expert document verification where it matters



Light sources:

- White (incident, 2 oblique, for detection of morphed photographs)
- UV (254 nm, 313 nm, 365 nm, 365 nm for visualization of phosphorescent inks)
- IR (incident 850 nm and 950 nm, 2 oblique 850 nm, for full page visualization 850 nm)
- High-intensity cyan 505 nm
- High-intensity infrared 980 nm
- Spot (white, UV 365 nm)

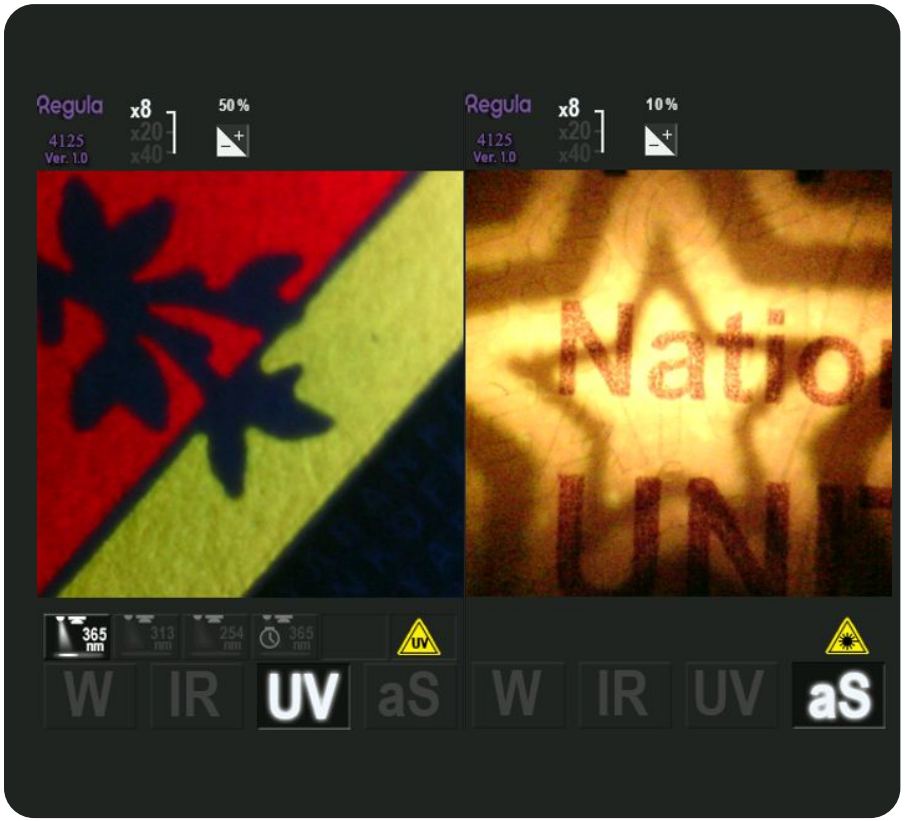
Regula 4125

Functionality:

- RFID chip detector
- Scale for estimating the geometric parameters of the object
- IPS display
- Built-in battery — 5200 mAh

Cameras:

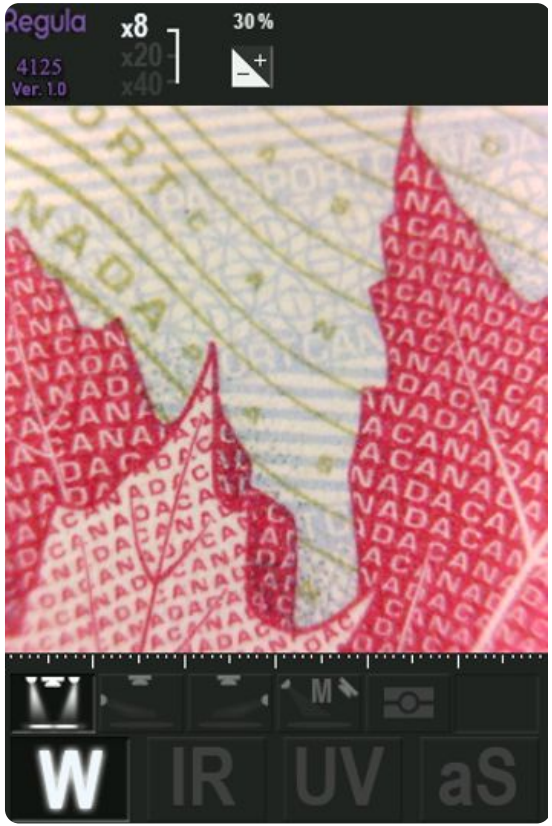
- 3 cameras — main, IR for full page visualization, to detect morphed photographs
- Zoom for the main camera — 8x, 20x, 40x
- Zoom for the camera used to detect morphed photographs — 50x, 125x, 250x



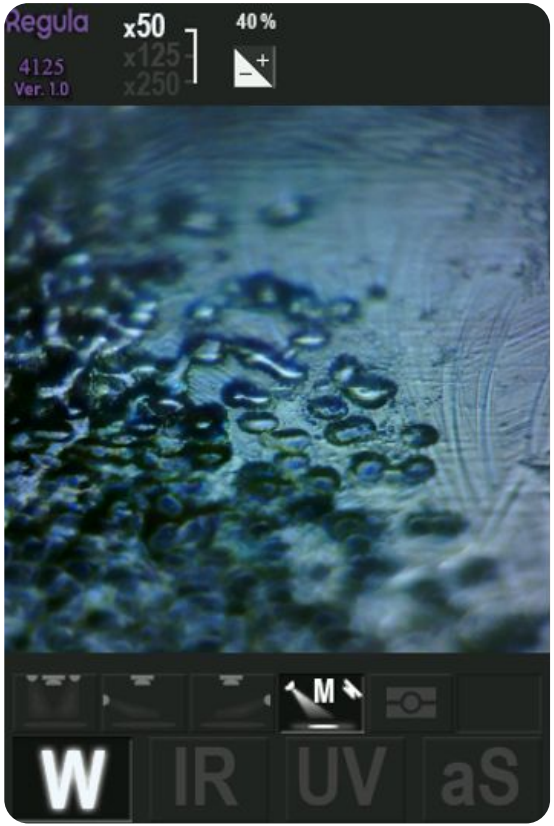
Regula 4125

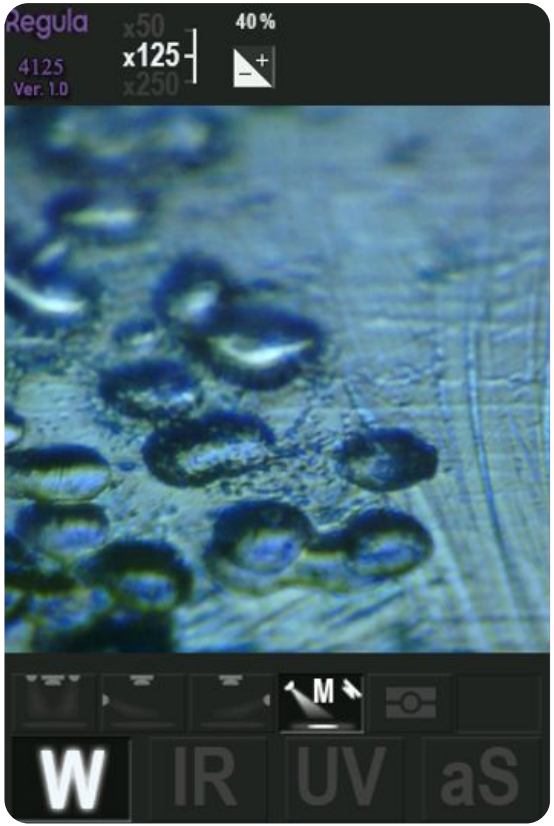

Regula
4125
Ver. 1.0
x8
x20
x40
40 %
W
IR
UV
aS

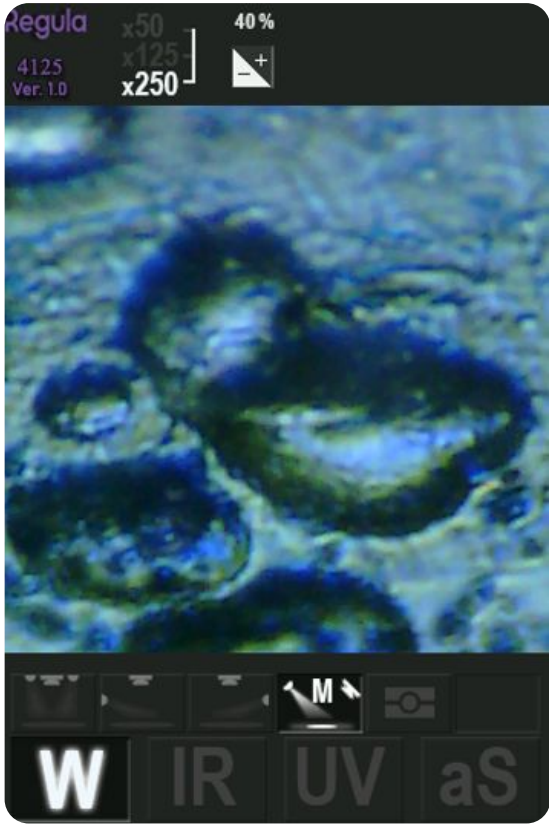

Regula
4125
Ver. 1.0
x8
x20
x40
30 %
W
IR
UV
aS


Regula
4125
Ver. 1.0
x8
x20
x40
30 %
W
IR
UV
aS

Regula 4125


Regula
4125
Ver. 1.0
x50
x125
x250
40 %
M
W
IR
UV
aS


Regula
4125
Ver. 1.0
x50
x125
x250
40 %
M
W
IR
UV
aS


Regula
4125
Ver. 1.0
x50
x125
x250
40 %
M
W
IR
UV
aS

Regula 7320



A rugged portable device intended for document authenticity verification and biometric data capture

- 108 MP back camera with LED light system
- 8 MP back IR camera – two IR LEDs
- 6.6” Multi-touch LCD display
- OS – Android 15, RAM 8GB, ROM 256 GB
- Long-life rechargeable battery, fast charging available – 11000 mAh
- GSM / HSPA / LTE / 5G, Wi-Fi, BLE wireless interface
- USB Type-C
- IP65

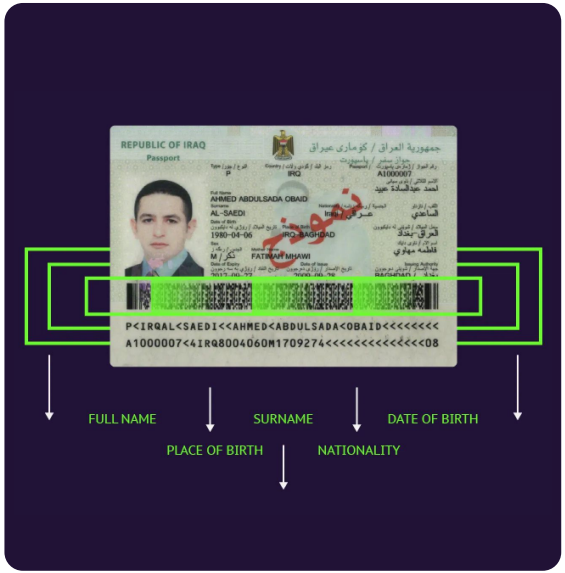
Regula 7320

Full identity verification in one device

NFC verification



Barcode reading
Enhanced UV/IR imaging algorithms



DTC reading



3

Forensic examination

Regula 4306

- 8 MP high-resolution camera
- 40+ types of LED light sources
- 19 light filters
- Hyperspectral imaging
- 3D visualization module
- Removable stage for large-size document examination



The Regula 4306 is a modern video spectral comparator that offers affordable, high-quality solutions for forensic examination.

Advanced Examination — Armenian DL

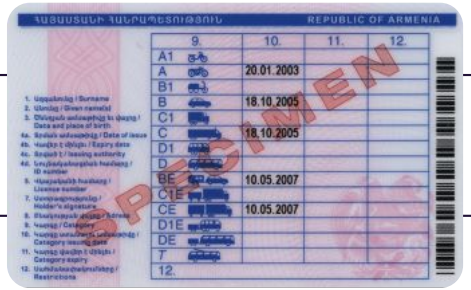
Examination in **white light**

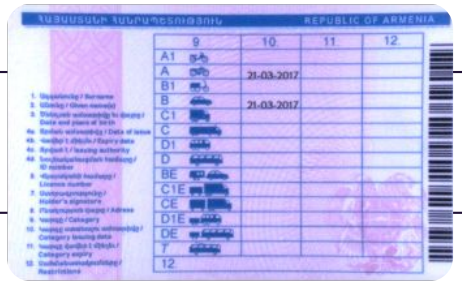
Front side





Reverse side





Specimen — W↓ ✓

✗ W↓ — Examined document

Advanced Examination — Armenian DL

Examination in **IR light 870 nm**

Front side





Reverse side





Specimen **IR 870** ✓

✗ **IR 870** Examined document

Advanced Examination — Armenian DL

Zoom x30



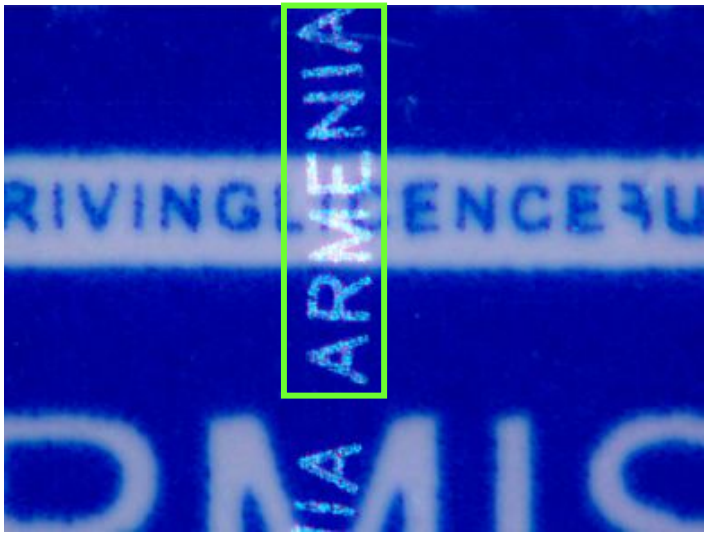


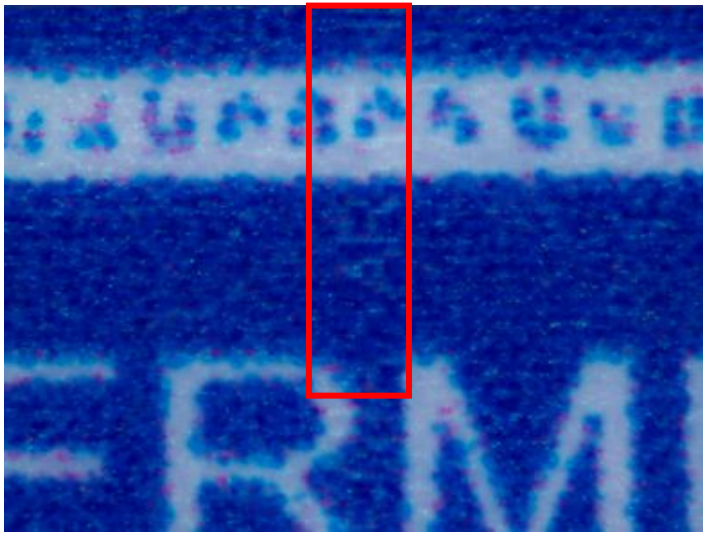
Specimen W↓ ✓

✗ W↓ Examined document

Advanced Examination — Armenian DL

Zoom x60



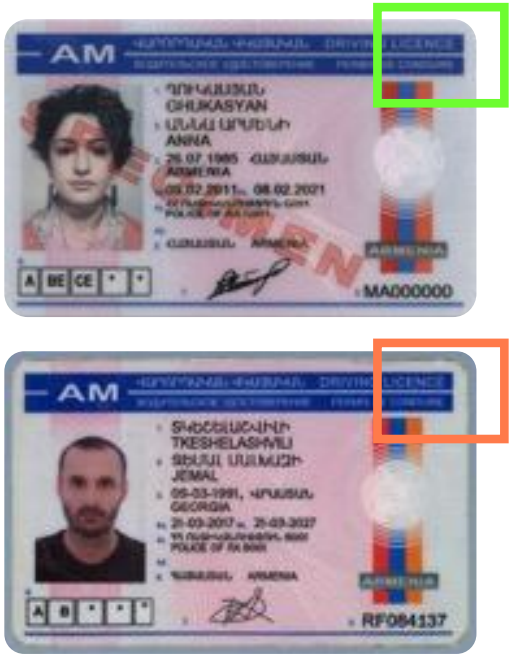


Specimen W↓

W↓ Examined document

Hyperspectral Analysis ——— Armenian DL

Colors: **red & blue**

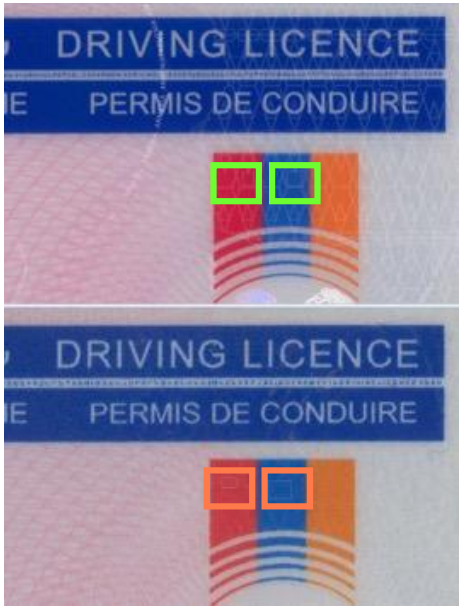


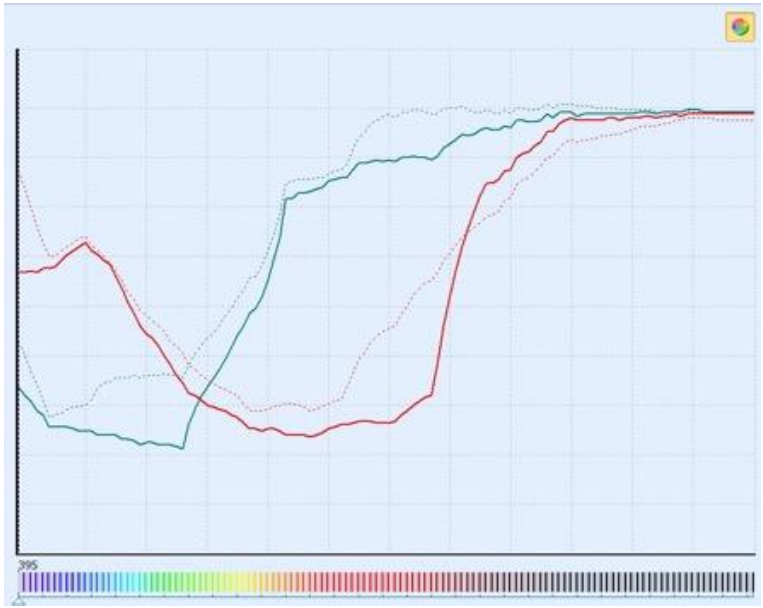
Examined area

Examined inks

Hyperspectral Analysis ——— Armenian DL

Colors: **red & blue**





Red inks
Blue inks

Advanced Examination — Estonian DL

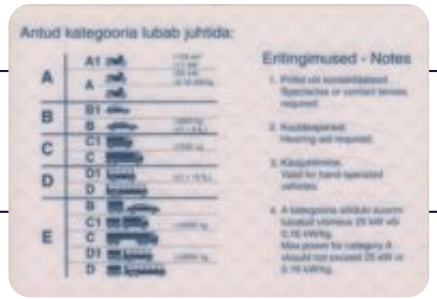
Examination in **white light**

Front side





Reverse side





Specimen

Examined document

Advanced Examination — Estonian DL

Examination in **UV light 365 nm**

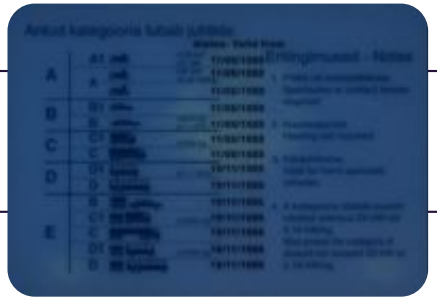
Front side





Reverse side





Specimen — **UV 365** ✓

✗ **UV 365** — Examined document

Advanced Examination — Estonian DL

Examination in **IR light 870 nm**



Front side





Reverse side



Specimen — **IR 870** ✓

✗ **IR 870** — Examined document

Advanced Examination — Estonian DL

Zoom x30





Specimen W↓ ✓ ✗ W↓ Examined document

Advanced Examination — Estonian DL

Zoom x30





Specimen W↓ ✓

✗ W↓ Examined document

Advanced Examination — Estonian DL

Zoom x30





Specimen W↓

W↓ Examined document

Advanced Examination — Estonian DL

Blind Embossing





Specimen W→ ✓

✗ W→ Examined document

Advanced Examination — Estonian DL

Rainbow Effect on Laminate

Visualization of the rainbow effect at a 50º angle of observation

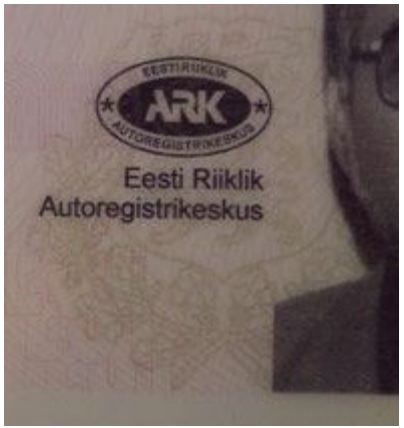


Visualization of the rainbow effect at a 120º angle of observation



Specimen W↓

Visualization of the imitated rainbow effect at a 50º angle of observation



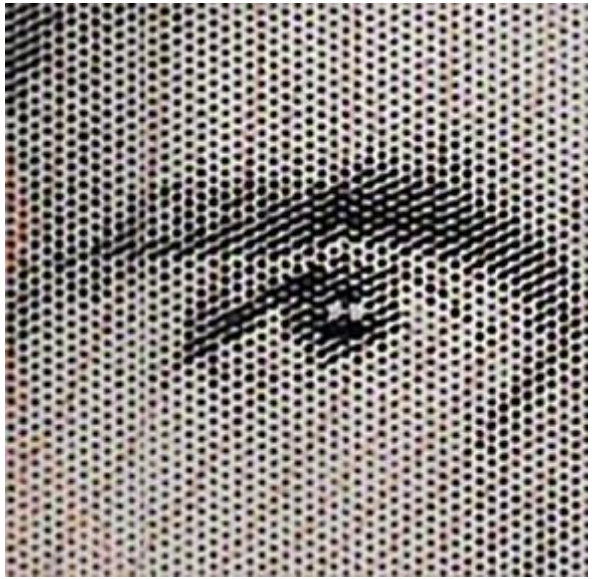
Visualization of the imitated rainbow effect at a 120º angle of observation

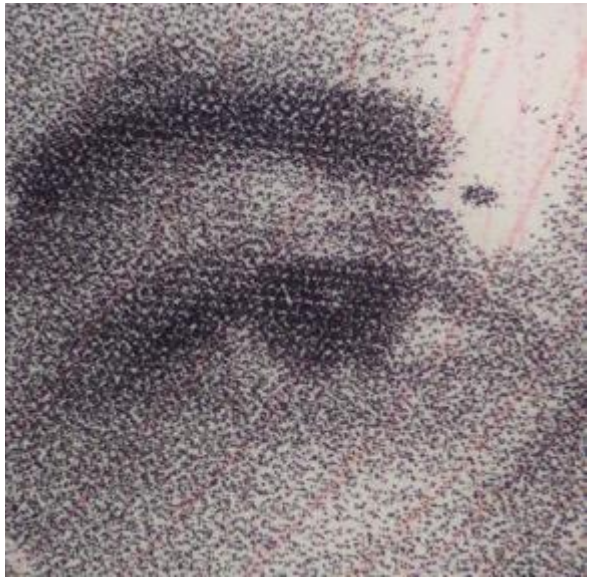


W↓ Examined document

Advanced Examination — Estonian DL

Holder’s portraits are applied by **laser printers**





Specimen

W↓

W↓

Examined document

Regula 4205D

- 12 light sources for comprehensive inspection of modern document security features
- 30x on-screen magnification



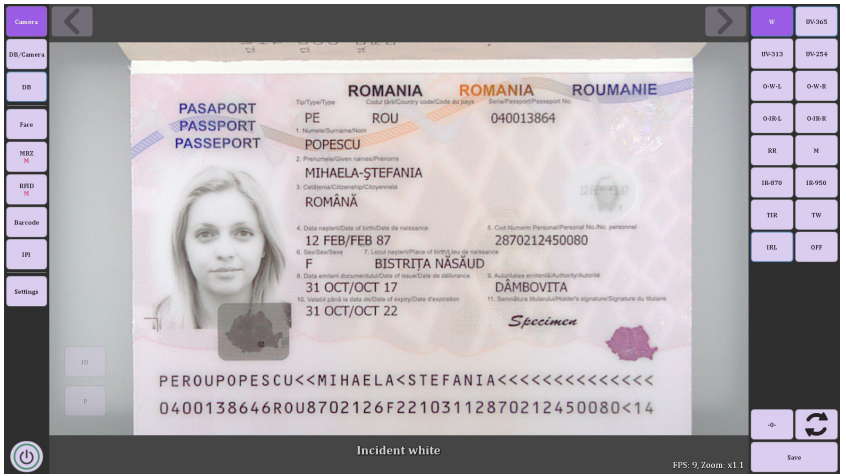
Brings counterfeit-detection capabilities previously available only in forensic laboratories to frontline border control

Regula 4205D

Document examination in **different light sources**



Ultraviolet incident (365 nm)



White incident

Regula 4205D

Document examination in **different light sources**



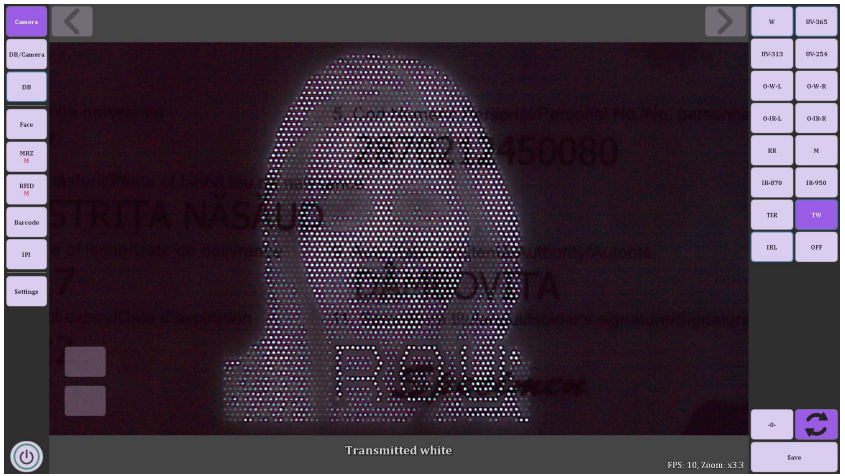
White incident, 20x magnification



White oblique, 20x magnification

Regula 4205D

Document examination in **different light sources**



White transmitted



IR oblique (870 nm), 20x magnification

Reference information

Regula Information Reference Systems

IRS PASSPORT
(images of passports, ID cards, visas and other identity documents)

IRS AUTODOCS
(images of driver's licenses and vehicle registration documents)

IRS CURRENCY
(images of banknotes)



+



+



IRS Frontline Documents System

IRS Secure Documents Ultimate

Options

- Server installation
- Local installation

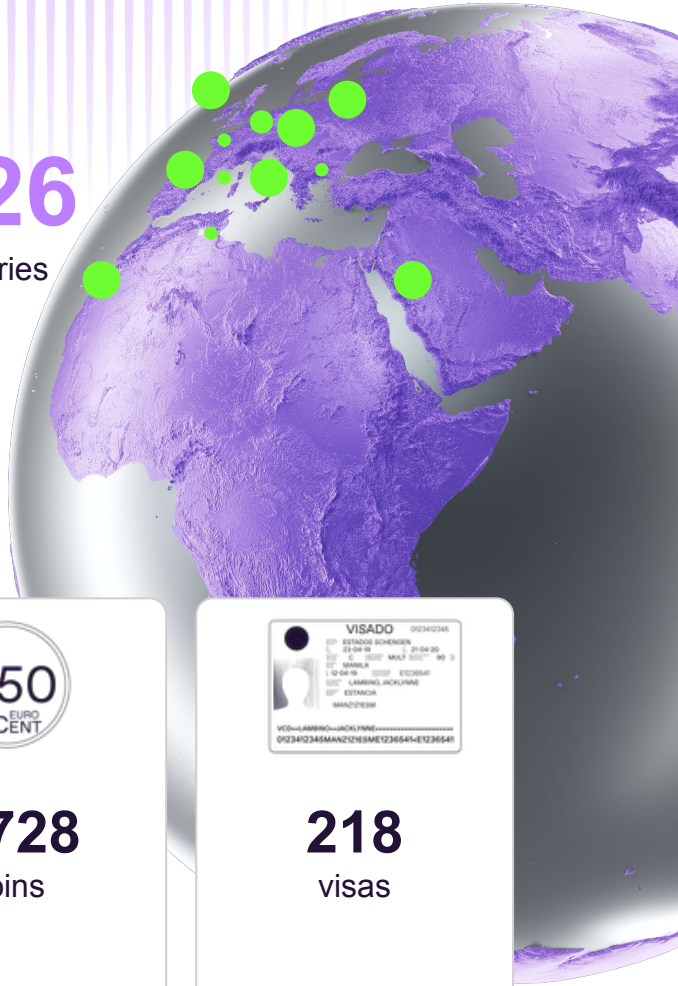
Regula Information Reference Systems

12 720 OBJECTS

346 516 images

226

countries, territories & organizations

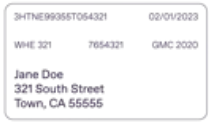




5 395
banknotes



3 383
passports

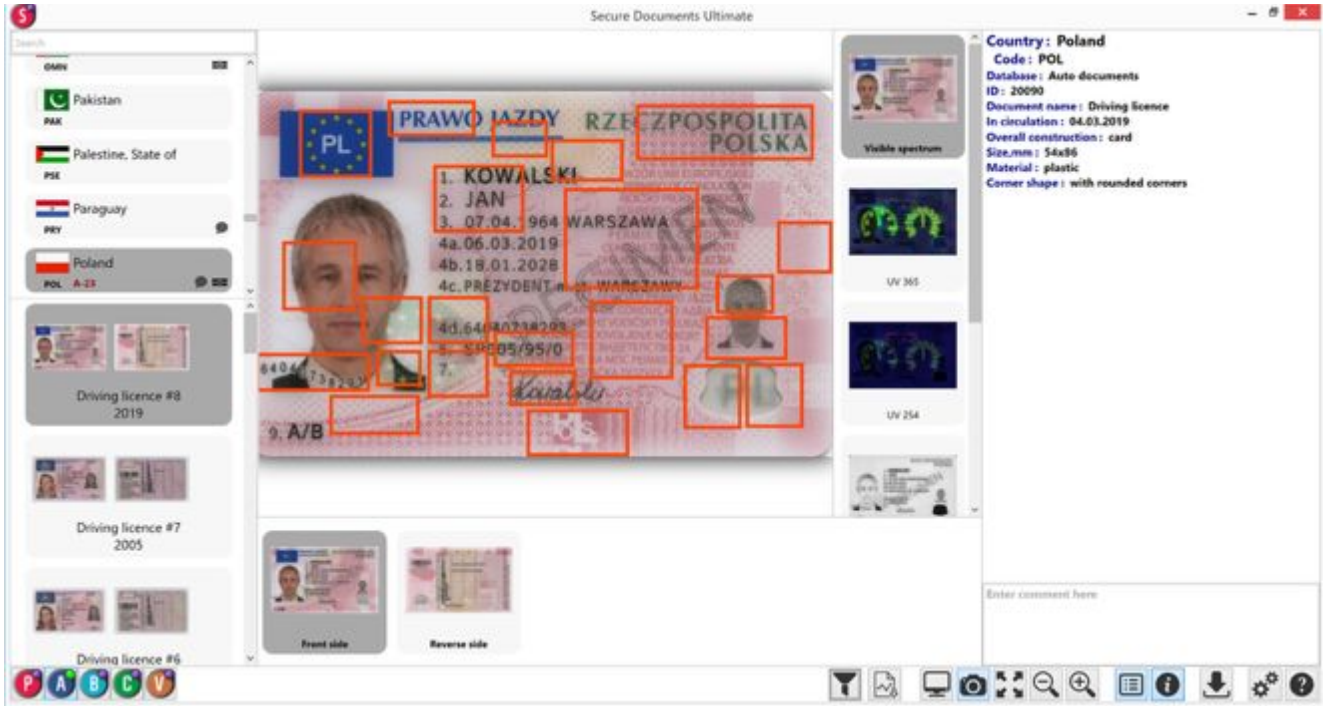


996
vehicle related documents

2 728
coins

218
visas

Regula Information Reference Systems



Regula IRS. Images in Various Light Sources



White



IR 870



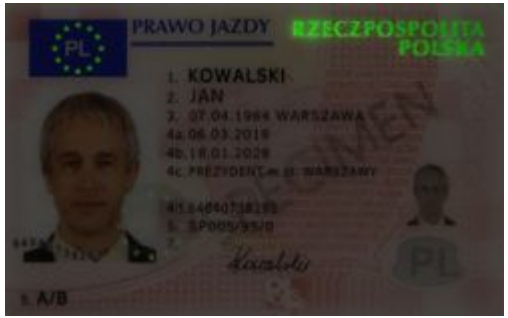
Cyan (IR luminescence)



UV 365



UV 254



High-intensity IR (anti-Stokes effect)

Regula IRS. Document Fragments

Contains

Images of document fragments
with security features
and printing techniques:

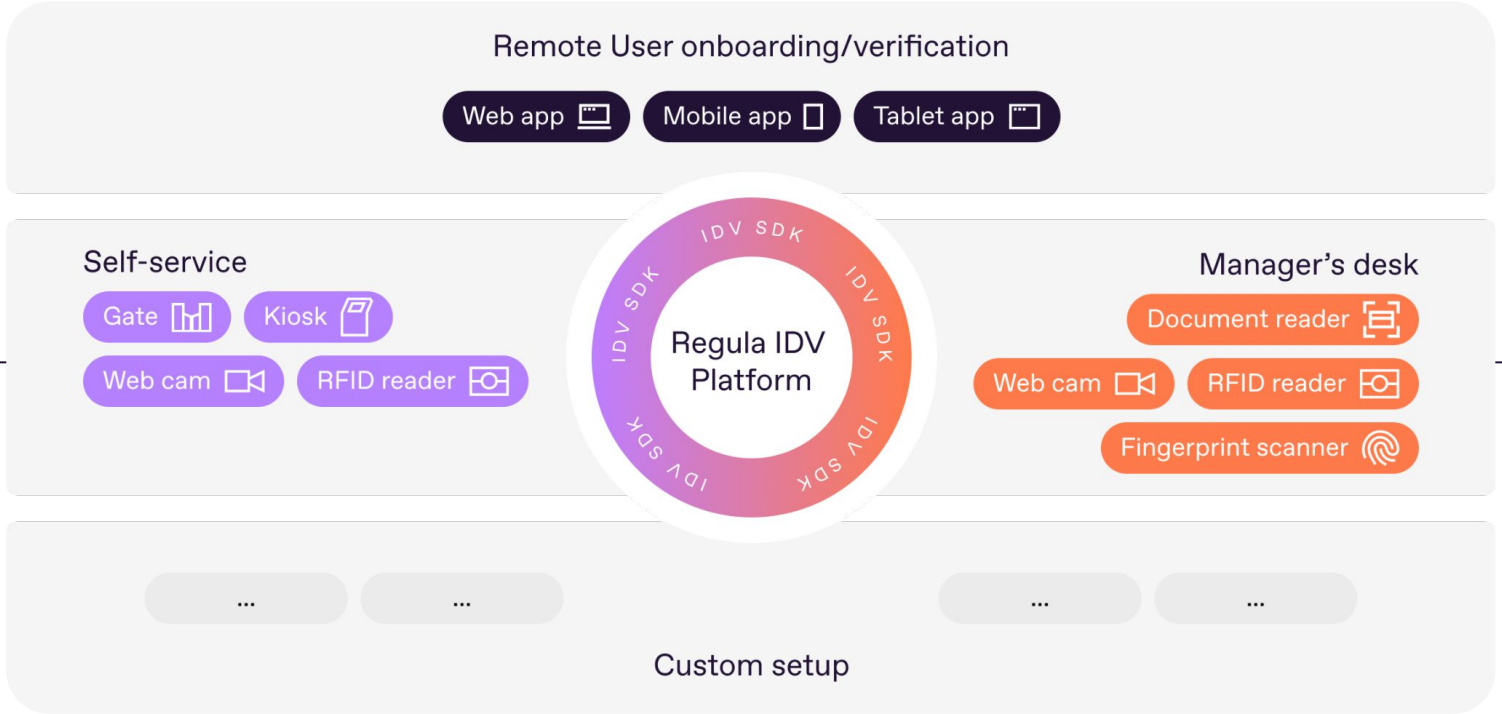
- microprinting,
- intaglio,
- letterpress,
- holograms
- DID, etc.



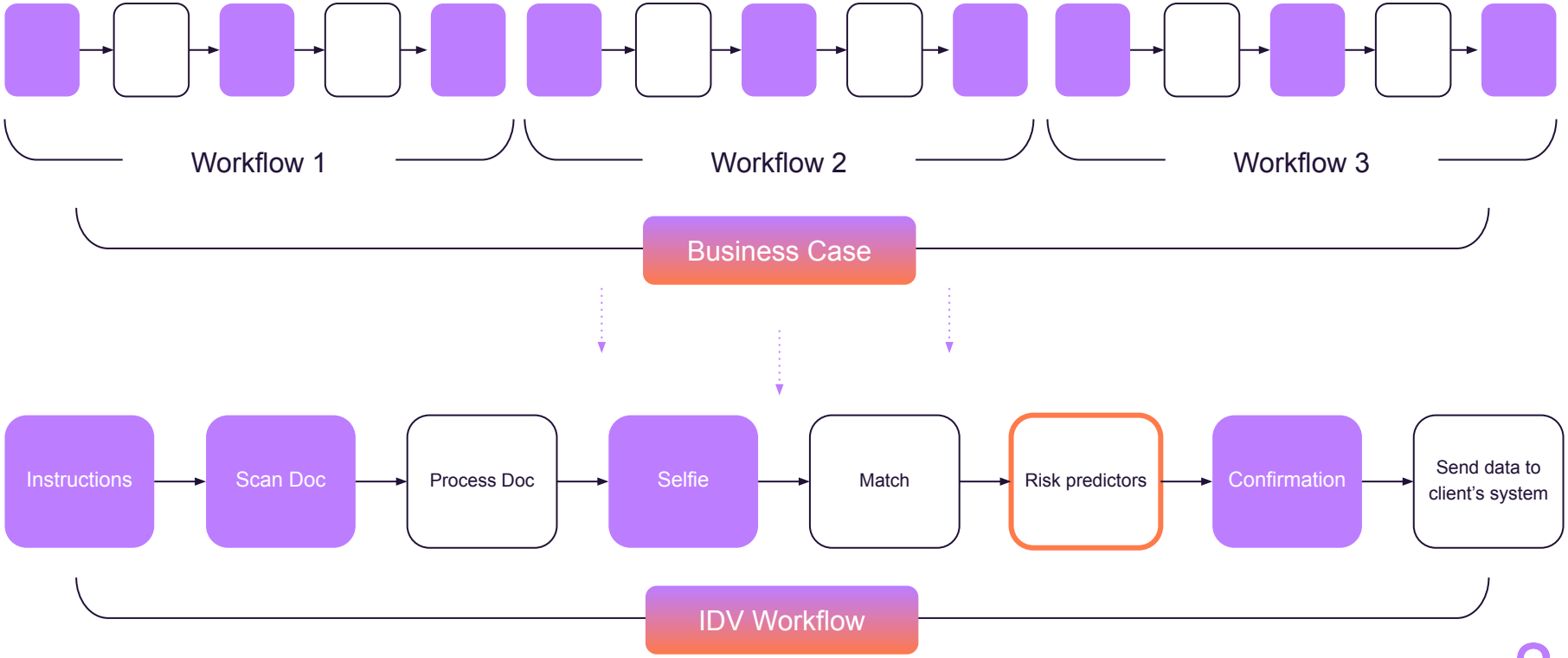
Business workflow integration

Any source, one platform

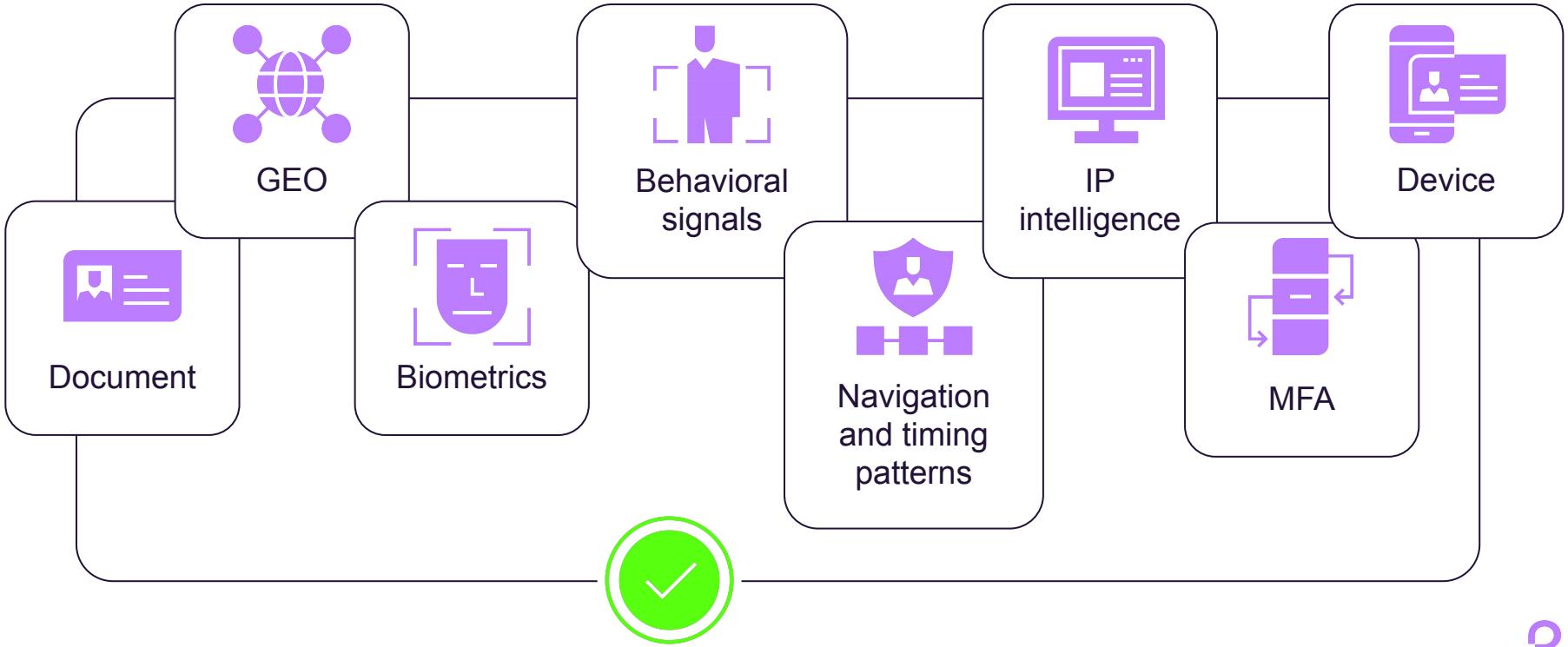
Connect document, biometric and device checks across remote, self-service and assisted verification



Turning a business process into an IDV workflow



Multi-layered approach

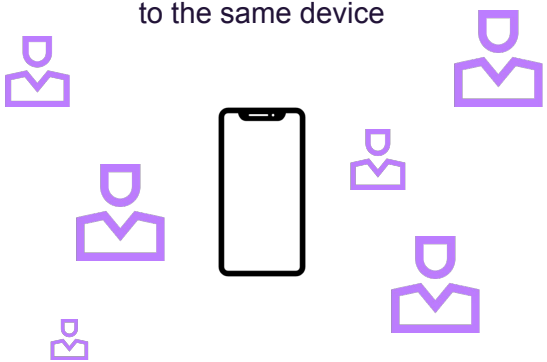


Risk Predictors flag suspicious patterns across sessions

Each organization configures its risk signals, thresholds and response

EXAMPLE RISK SIGNAL

Multiple profiles linked to the same device



RULE TRIGGERED

Risk predictor becomes positive

The detected value exceeds the configured threshold

AUTOMATIC RESPONSE

The platform applies the selected action:

- → Block the device
- → Reject the session or profile
- → Create a case for review

Affected sessions and configuration changes are recorded for audit

Hardware, software and the IDV Platform

REGULA IDV PLATFORM

Brings data, results and context together

Identity data, verification results, session history and risk signals are analyzed in one operational environment.



HARDWARE

Reveals physical evidence

Security features and signs of alteration become visible under magnification and specialized illumination.



SOFTWARE + DOCUMENT KNOWLEDGE

Interprets the document

Reference information and automated checks establish what a genuine document should contain.



Thank you!

Regula

Identity Verification for the AI Era

Forensic Science Inside