Mobile workstation Regula 83X3M

The workstation is intended for automated reading and authenticity verification of passports, ID cards, driver's licenses, visas and other security documents.

Regula 83X3M enables text and barcode recognition, RFID tag reading.

The function of fingerprint scanning and verification is available.

The mobile workstation comprises a tablet PC and an optical document reader. It can be used both as a desktop solution (powered by the AC mains) and as a portable device (powered by a battery pack).

The document reader allows capturing document images in white, infrared, ultraviolet and white coaxial light depending on the workstation model. Regula 83X3M is optionally equipped with an RFID-reader. Workstation operation is controlled via special software **Regula Document Reader SDK**.

Functionality

- Capturing and processing images
    - supported document formats
        - ID-1
        - ID-2
        - ID-3
        - other documents with maximum size 90×130 mm
    - document detection sensor
    - automatic scanning after document detection
    - compensation of external light hitting during image capture in ultraviolet light (Smart UV)
    - automated selection of UV illumination intensity according to the document type
    - search and cropping of a document image from a general image
- the MRZ detection and recognition
- recognition and reading of 1D and 2D barcodes
- automated recognition of a document type
- processing graphic fields
- OCR of the visual zone
- reading RFID-tags
- analyzing and comparing text data
- automated authenticity verification of a document

Operation

1. The optical reader automatically detects a document in the reader slot.
2. Images of the document in functional illumination modes are formed. At the same time data from an RFID tag is read out.
3. A fingerprint is scanned.
4. Obtained data are processed by **Regula Document Reader SDK**.
5. The results of processing are available for further use.

Application

- Border control services
- Aviation security services
- Law-enforcement agencies
- Immigration services
- Financial institutions
- Hotels
- Car rental and leasing companies
- Cellular companies
- Business centers security service
- Event-agencies
- Medical institutions
- Tourist agencies
- Ticket offices
- Visa support agencies and consulates
- Insurance companies

- Casino security service

Delivery Set

- **Regula Document Reader SDK**

MOBILE WORKSTATION REGULA		Model
		8333M.111
Optical reader		
Light sources	White	+
	Infrared 870 nm	+
	Ultraviolet 365 nm	+
	Coaxial white	+
Camera sensor, megapixels		3
Image resolution, ppi		400
Frame size, pixels		2048×1536
Scanning area, mm		90×130 – full passport page
Video sensor type		CMOS
Color model		RGB
Color depth, bit		24
RFID Reader (details)		+
Fingerprint Scanner (details)		+
Tablet PC (details)		+
Technical Specifications		
Dimensions (L×W×H), mm		276×190×155
Weight, kg, max		4.1
Power supply from AC, V		19
Power supply from battery pack, V		14.4
Operating time on battery, h, not less		6
Certificates		
CE		+
Climatic Conditions		
Relative air humidity		35..85% (non-condensing)
Air temperature, °C		+0...+40
IP rating		IP41

RFID Reader	
Standards supported	ISO 14443: type A and B
Data exchange rate, Kbaud	106, 212, 424, 848
RFID tag positioning	RFID reading regardless of tag position in the document
Anti-collision	reading an RFID tag according to the MRZ

Fingerprint Scanner

Scanning time, s	0.15
Scanning area, mm	16×24
Resolution, dpi	508
Frame size, pixels	480×320
Connection interface	USB 2.0

Tablet PC	
CPU, GHz	Intel Celeron N5100, 2.8
RAM, Gb	8
SSD, Gb	128
Display	8 inch, 1920×1200
Camera	5 MP (front), 8 MP (rear)
OS	Windows 10 pro 64 bit
Interfaces	1xUSB3.0, 1xUSB Type-C, SIM Card, TF Card, 1xHDMI1.4a, 1xAudio 3.5 mm, 1xRJ45 Ethernet 10/100 Base-T port

Document reader software development kit (SDK)

SDK (**Full**) consists of three modules:

- Basic – supplied together with a device by default
- VizOCR – reading textual fields from a document page
- AAC – automatic authenticity control

VizOCR and AAC modules are optional and used to extend the functionality of Basic module.

Updates for SDK are provided regularly. Basic module has unlimited support. VizOCR and AAC are updated on subscription basis.

Functionality		Full SDK modules		
		Basic (supplied by default)	**VizOCR**	**AAC**
Document image capture and processing				
Document formats	• ID-1 (identity card) • ID-2 (passport card, visa) • ID-3 (passport) • other document formats up to 90×130 mm	+		
Scanning process	• document detection sensor • automatic scanning after document detection • elimination of glare from laminate and holograms for white and infrared illumination • compensation of external light hitting during image capture in UV light (Smart UV) • automatic intensity selection of UV illumination for a certain document type • search and cropping of a document image from a received image	+		
Machine readable zone (MRZ)				

Supported MRZ formats	• in conformity with ICAO 9303:
	  ◦ 44×2
	  ◦ 30×3
	  ◦ 36×2
	• in conformity with ISO IEC 18013 (IDL):
	  ◦ 30×1
	• support of special MRZ data structure for documents of certain countries
		+		

Features	• search for the MRZ along the whole document image • MRZ recognition in infrared and white light • control of check digits and data structure in conformity with the requirements of ICAO 9303 and BSI TR-03105 Part 5.1 • evaluation of MRZ quality specifications in conformity with ICAO 9303, ISO 7501, 1831, 1073-2 standards	+		
Barcodes				
Supported formats	• 1D: Codabar, Code39 (+extended), Code93, Code128, EAN-8, EAN-13, IATA 2 of 5 (Airline), Interleaved 2 of 5 (ITF), Matrix 2 of 5, STF (Industrial), UPC-A, UPC-E	+		

	• 2D: PDF417, Aztec Code, QR Code, Datamatrix			
Authentication	• barcode format check			+
Automatic document type recognition				
Order of document type recognition	• Country→Type→Series		+	+
Features	• receiving a document template from the SDK database containing the following information: ◦ text and graphic fields position ◦ availability of barcodes and security features ◦ authenticity verification and its parameters ◦ RFID-chip availability ◦ a reference image from Information Reference Systems «Passport», «Autodocs», «Frontline Documents System» • processing of the received document images in compliance with the sample, including document image rotation by the angle given in the sample		+	+
Graphic fields processing				
Types of graphic fields	• portrait of the document holder • signature • barcode • fingerprint, etc.	+		
Features	• cropping and displaying graphic fields as separate images in compliance with the sample of the corresponding document • automatic searching of faces on the document image and cropping the document holder portrait if the document type is not recognized • document image rotation according to the document holder portrait position	+		
OCR of the visual zone				
Recognition of character sets	• Central European and Eastern European Latin (1250) • Cyrillic (1251) • Western European Latin (1252) • Greek (1253) • Turkish (1254) • Baltic (1257) • other fonts of any size		+	
Features	• dictionary support (name, surname, address, country, etc.) • automatic text division into separate fields (e.g. dividing the address into postal code, country, state, etc.) • recognition of dates with complex formats • recognition of characters from different character sets in one line		+	
RFID SDK				
Supported RFID-chip standards	• ISO/IEC 14443-2 (type A and B) • ISO/IEC 14443-3 (MIFARE® Classic Protocol) • ISO/IEC 14443-4	+		
Data access modes	• Direct • BAC • EAC	+		

	• PACE • SAC			
Authentication	• active (AA) • passive (PA) • chip (CA v1, CA v2) • terminal (TA v1, TA v2)	+		
Supported applications	• ePassport (DG1–DG16) • eID (DG1–DG21) • eSign • eDL (DG1–DG14)	+		
Certificate management	• local storage • receiving certificates online through the program interface • Master List, CRL support	+		
Features	• reading RFID chips with extended length support • reading RFID chips in compliance with ICAO LDS 1.8, PKI 1.1 data formats • certified by BSI TR-03105 Part 5.1, BSI TR-03105 Part 5.2	+		
Analysis and comparison of text data				
Document areas for cross-checking of the readout data	• MRZ • VIZ • RFID-chip • barcode	+		
Verification	• validity of any dates • authenticity of names and surnames according to lists of wordstops • zero numbers of sample documents	+		
Adjustment of formats and measuring units to those used in the user OS	• date • weight • height, etc.	+		
Features	• complete or partial comparison of fields • integration of data received from several document pages • calculated field support (age, etc.) • transliteration to Latin characters in compliance with ICAO 9303 standards for comparison with the MRZ	+		
Authenticity verification				

Operation available for any document	• checking luminescence (UV Dull Paper) of:
	  ◦ the form
	  ◦ the MRZ area
	  ◦ the portrait area
	• checking the MRZ print contrast in compliance with ICAO 9303 (IR B900 Ink)
		+		

Operations available after document type recognition	• checking image patterns in white, IR and UV light
	• checking luminescence of UV protection fibers
	• detection of false luminescence
	• checking photo embedding type: printing or attachment
	• checking IR Visibility of:
	  ◦ elements of the form
	  ◦ text data
	  ◦ the photograph (main and additional)
				+

	• detection of holograms (OVD), OVI • reading a luminescent text and comparing it with the data obtained from the MRZ and VIZ (OCR Security Text) • visualization of IPI (Invisible Personal Information) • checking retroreflective protection • checking barcode format			
Features	• checking operations are adjusted to documents with different degrees of wear and tear • the choice of checking operations depends on security features available in a questioned document			+
Additional SDK functions				
Image formats	• .BMP • .JPG • .JP2 • .PNG • .TIF • other image formats are possible on request	+		

Interoperability	• comparison modules:
	  ◦ fingerprint images from RFID chip and external fingerprint scanner
	  ◦ face images from document data page and/or RFID chip
	• Information Reference Systems «Passport», «Autodocs», «Frontline Documents System»
		*		

OS compatibility	• Windows 7 (x86, x64), Windows 8, Windows 10, Windows 11, Ubuntu 20.04—24.04, Debian 11—12, RHEL 9, macOS 11+	+		
Drivers	• Microsoft certified	+		
Features	• simultaneous optical scanning and RFID chip reading • firmware upgrade via USB interface (automatic upgrade after installing new SDK version) • multilingual interface	+		
Software updates				
SDK	• twice a year	*		
Document template database	• monthly	*		

* – on request / individual agreement

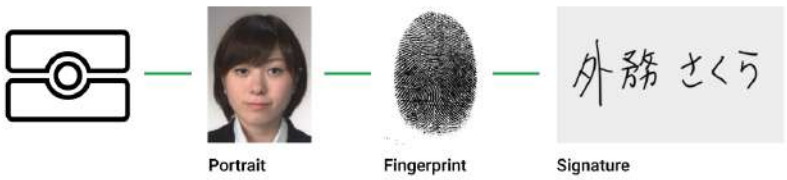
Visual zone

RFID-chip (Radio-frequency identification)

Document data readout: textual data readout

Visual zone

RFID-chip (Radio-frequency identification)



Document data readout: graphic data readout

White

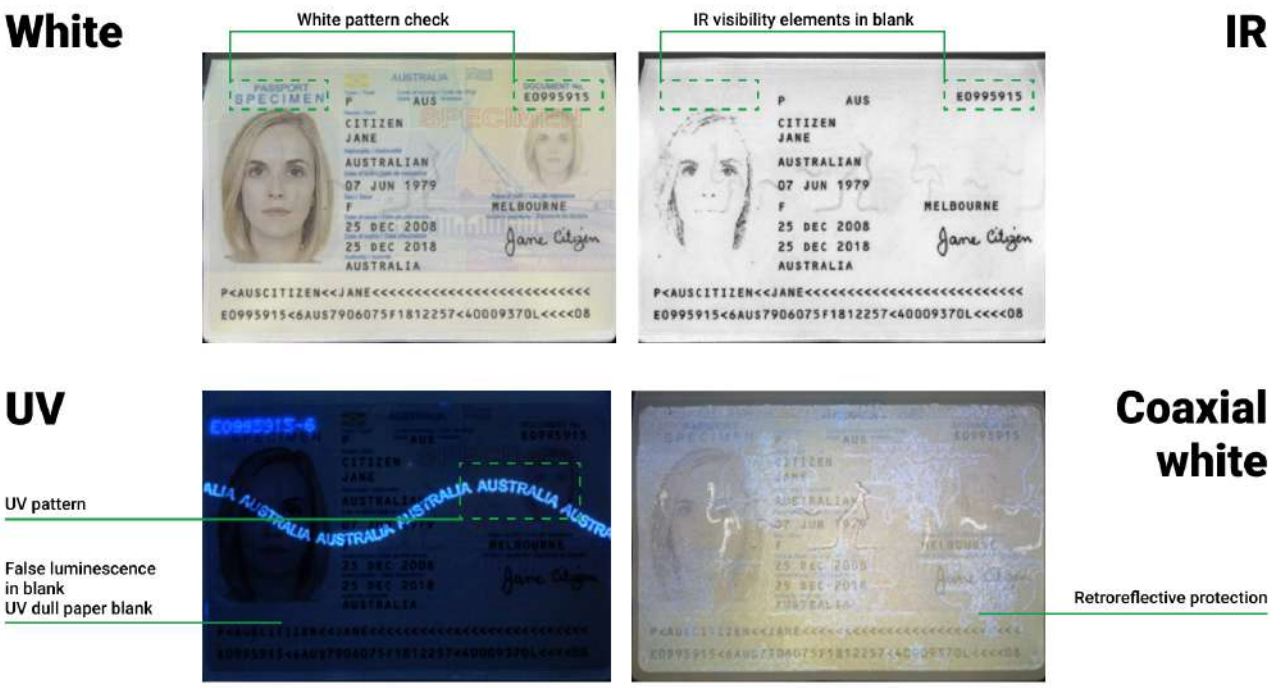
Performed security checks in white light

White IR

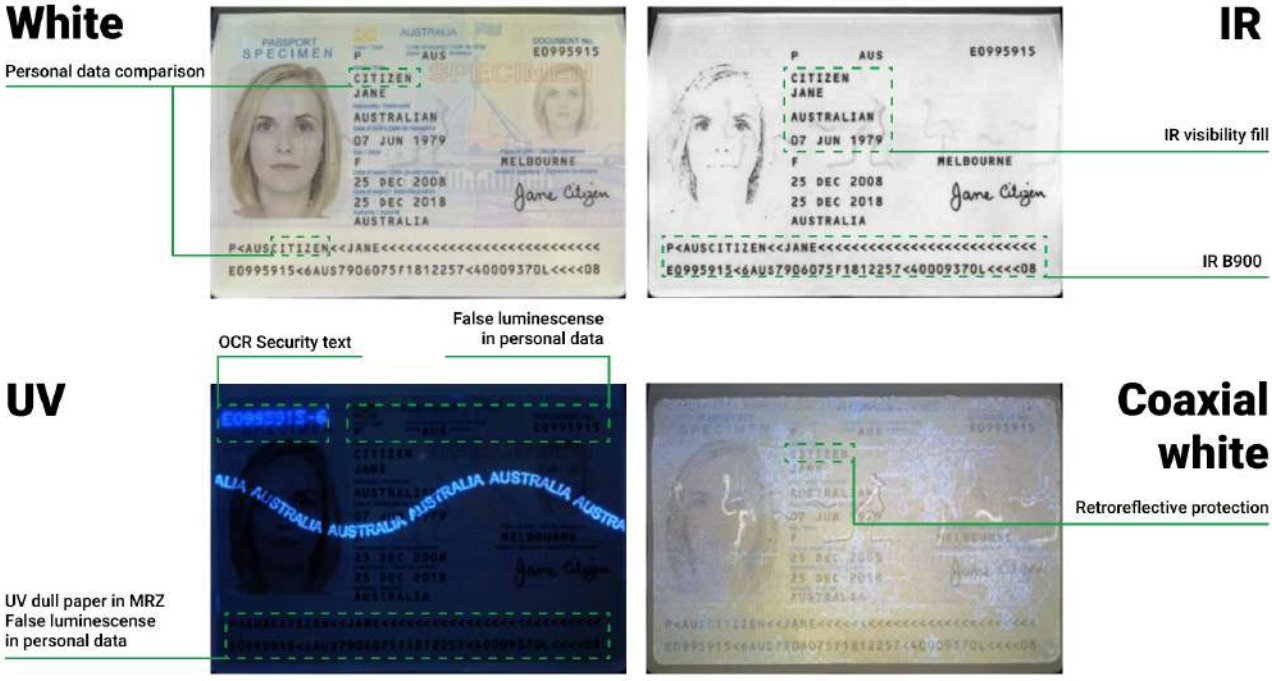
Performed security checks in infrared light

Performed security checks in ultraviolet light

Checking photo embedding type: printing or attachment



Checking the blank of the document



Checking the personal data

Viewing the passport from IRS database

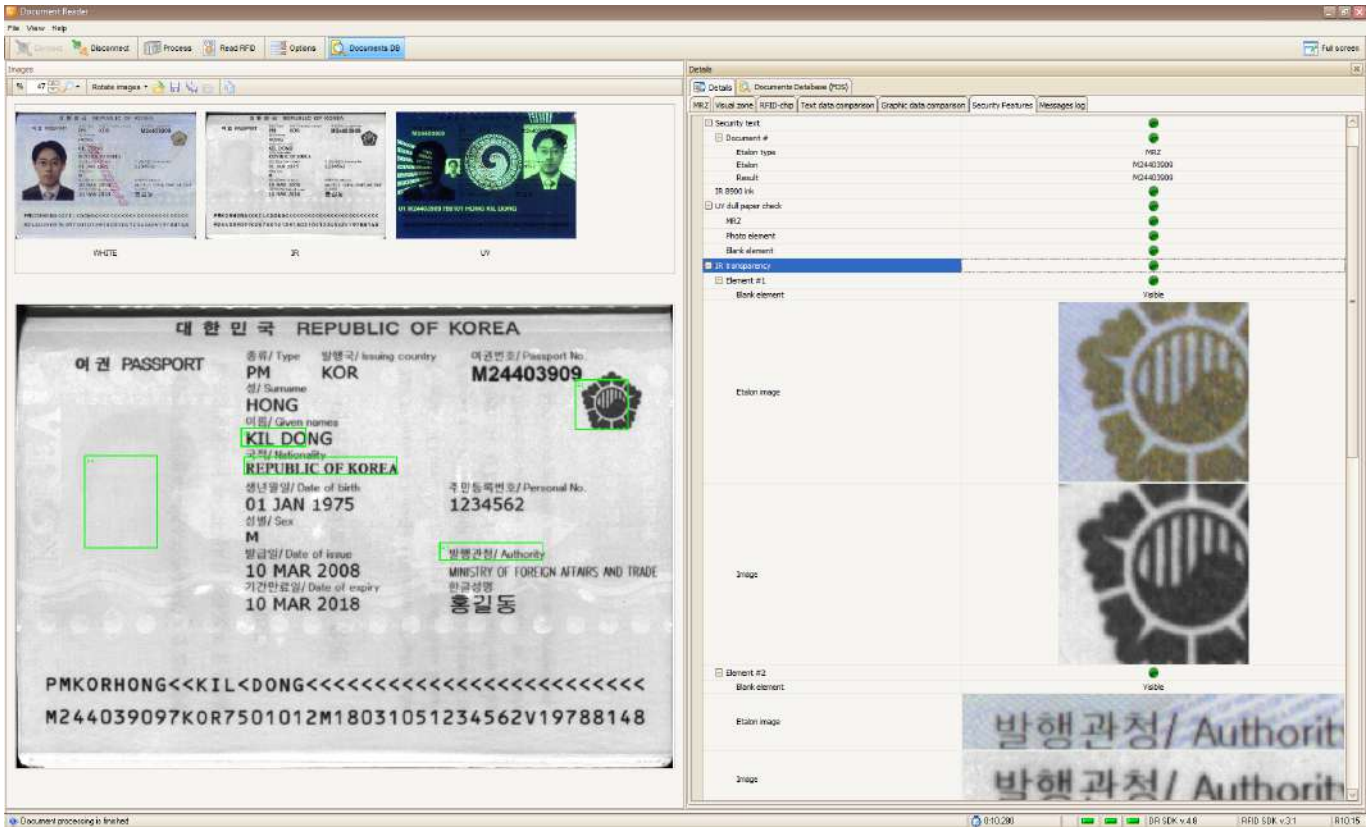
MRZ of the passport

Visual zone of the passport

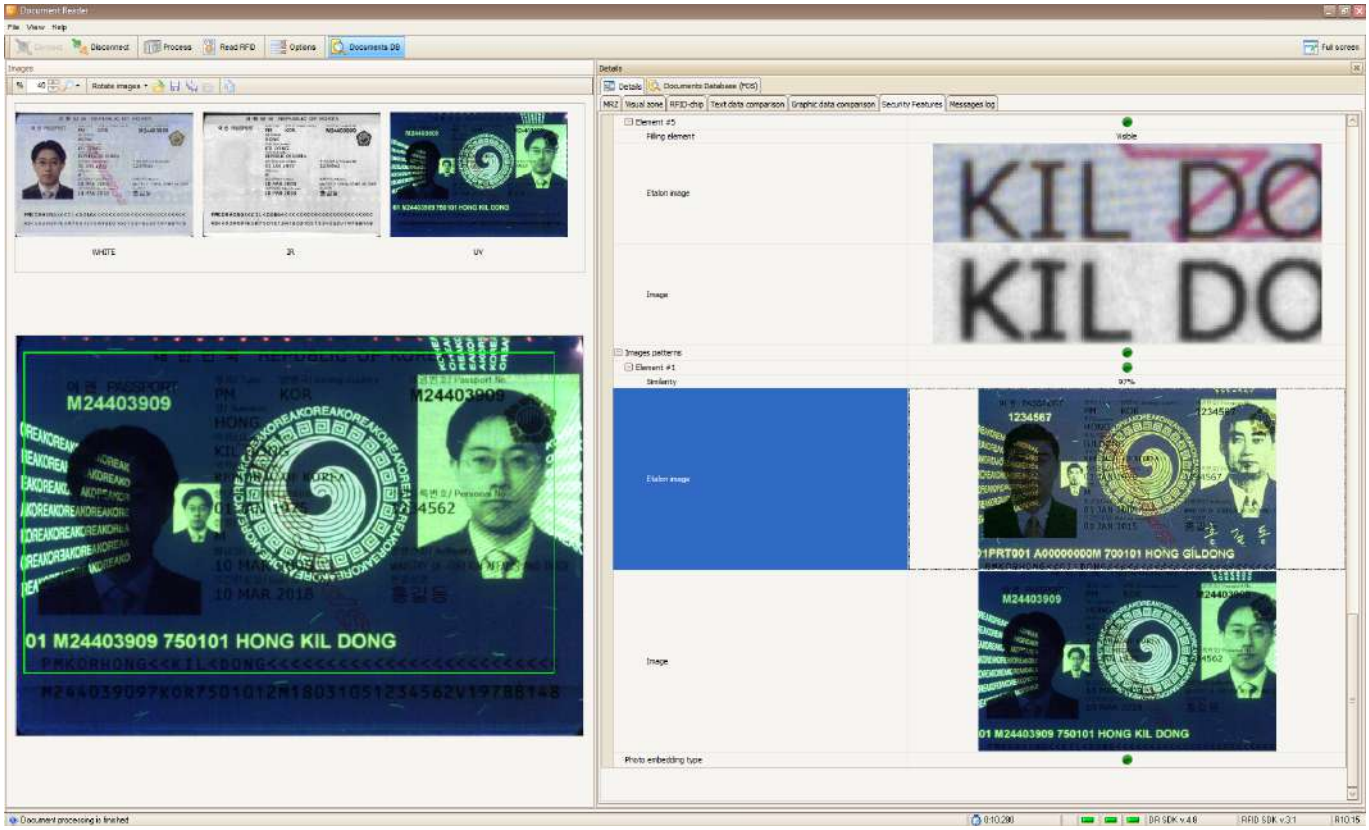
RFID-chip of the passport

Text data comparison of the passport

Graphic data comparison of the passport



Security features of the passport



Security features of the passport