µFR e-Passport reader

Version 1.0
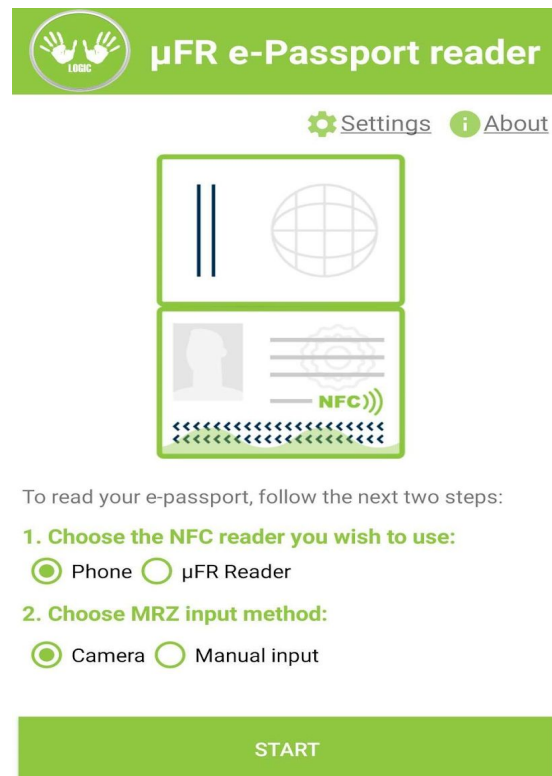
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Introduction

This application is used for reading and verifying NFC chips in e-Passports using either external NFC reader (μFR Series by Digital Logic) or phone's NFC antenna.

Support for reading data groups from NFC tag embedded in the **Machine Readable Travel Documents (MRTDs)**, including e-Passports that comply with ICAO specifications, has been implemented in the uFCoder library.

ICAO stands for International Civil Aviation Organization (https://www.icao.int).

Implementation supports Basic Access Control (BAC) mechanism for NFC chip access.

Application will try to optically scan the **Machine Readable Zone (MRZ)**.

If you don't want to scan your document using your phone camera, you can type in the MRZ data manually to gain access to e-Passport NFC chip.

MRZ (in red rectangle)

Settings

First, you need to choose the NFC reader you wish to use. You can choose between **Phone NFC** or **µFR Reader**. Phone NFC is selected by default.
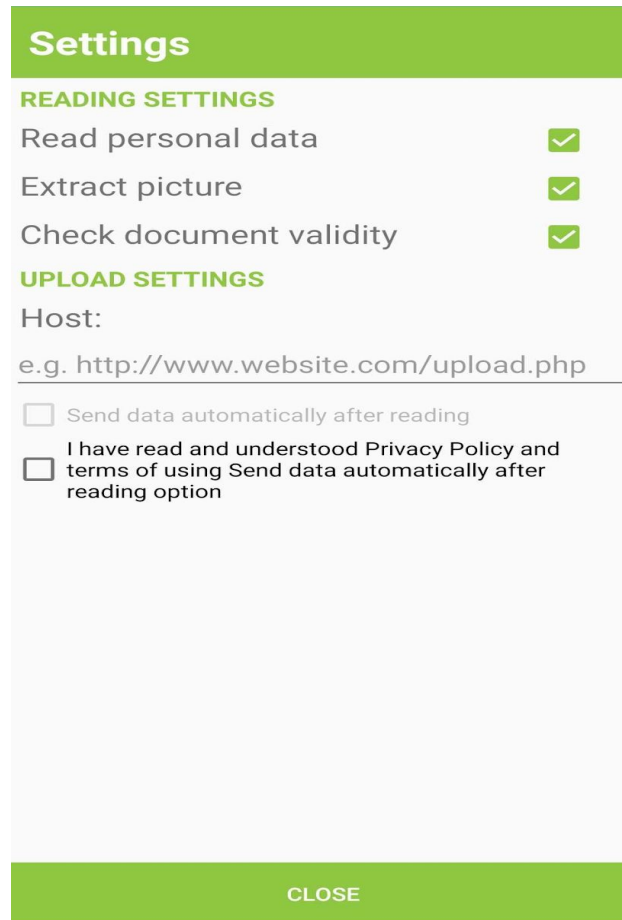
After that, you need to choose the MRZ input method. You can choose between **Camera** (application will try to optically scan the MRZ zone of e-Passport) or **Manual input** (you need to enter the passport number, date of birth of the document holder and document expiration date).

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To select data you want to read, click on **Settings** at the top right corner of your screen.

On the Settings screen you will be able to choose which data you want to read. You can ucheck data that you don't want to read. Personal data, picture of the document holder and document validity are checked by default.

You can also configure **Host** for sending extracted data for e-Passport NFC chip.
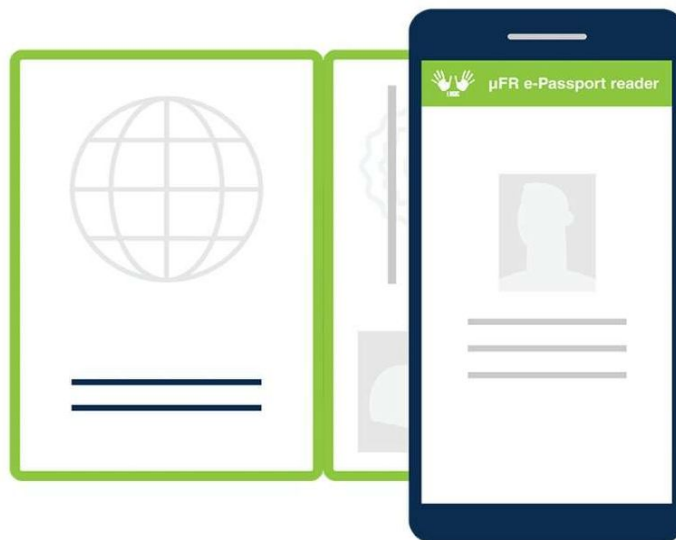
For **Send data automatically after reading** you will need to check that you understand and agree with **Privacy Policy** and terms of using this option.

Scanning MRZ zone

After successfull configuration in Settings and on the main screen, click the **START** button. Application will ask you for Camera permission if you selected Camera as MRZ input method.

Place your Camera preview at the MRZ zone of e-Passport.
If MRZ was successfully scanned, you will hear 'beep' and reading passport screen will be shown.

Reading passport

If you see message shown on the picture below:

Place your phone over the e-Passport and wait for reading to finish.

Reading looks like this:

DOCUMENT INFORMATIONS

EMRTD FORMAT: DG3
DOCUMENT CODE: P (EPASSPORT)
ISSUING STATE OR ORGANIZATION: SRB
NAME OF HOLDER: [redacted]
DOCUMENT NUMBER: 00B711056
NATIONALITY: SRB
DATE OF BIRTH (DD.MM.YYYY.): [redacted]
SEX: [redacted]
DATE OF EXPIRY (DD.MM.YYYY.): [redacted]
OPTIONAL DATA: [redacted]

DOCUMENT VALIDITY

When reading is finished you will get something like this:
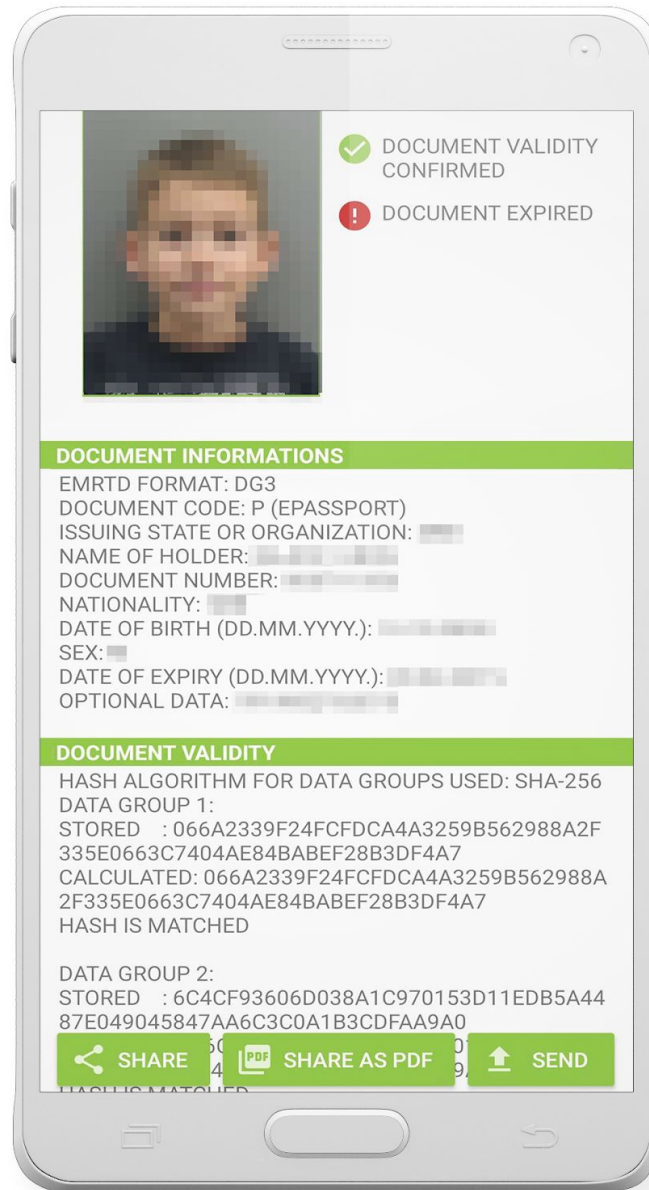
You have 3 options for sharing data:
1. You can share it as picture + text on **SHARE** option
2. You can share it as PDF file on **SHARE AS PDF** option
3. You can send **HTTP POST** on PHP script defined in **Host** field on **Settings** screen

REST Service

HTTP method is **POST**, it will execute if you click on the **SEND** button after successfully readed passport or will execute immediately (without clicking the SEND button) after reading if you checked the "**Send automatically after reading**" option in **Settings**. In the table below are described all POST parameters:

Parameter name	Descripiton
Name	String containing First and Last Name of the document holder
BirthDate	String containing birth date of the document holder in format DD.MM.YYYY.
DocumentNumber	String containing document number
IssuingState	String containing ISO 3166-1 alpha-3 country code
Nationality	String containing ISO 3166-1 alpha-3 country code
Expiration	String with value "DOCUMENT ACTIVE" if document is active or "DOCUMENT EXPIRED" if document is expired
Validation	String with value "VALIDITY CONFIRMED" if document validity is confirmed, otherwise "VALIDITY NOT CONFIRMED"
Picture	String containing picture of the document holder in Base64 format

If some of the data are not readed, String with value "**NOT READ**" will be sent instead of parameter.

Revision history

Date	Version	Comment
2020-02-03	1.0	Base document