

VERIFAI.

fraud prevention **done right**

The personal or social security number on your document is sensitive personal information. However, the document code is a randomized code without any logic. Some countries, such as The Netherlands, did developed a document code rule that can be checked using the so-called 'elf-check'. The document number on Dutch identification cards starts with two letters on position 1 and 2, on position 3 till 8 you can find randomized letters and numbers, and position 9 ends with one number. However, other countries in the world are using totally randomized numbers. This means that you can never check the authenticity of a document based on the document code.

Document no.

GH54D02H2

Reading the MRZ

The Machine-Readable zone (**MRZ**) is introduced by the International Civil Aviation Organization (**ICAO**) in the late 1980s to ensure a standardized method for optical character recognition. All **ICAO** requirements are described in the **ICAO 9303** document. In total, three types are of **MRZ** are developed but only two types are widely used. The **MRZ type I** is used for national ID's and driving licenses, while **type II** MRZ's are used for travel documents, such as passports. This is why Verifai is blocking your **MRZ** during verification.

Most importantly, on some places in the **MRZ**, a so-called check digit is included which is algorithmically calculated based on your personal data. Most criminals are not capable or do not calculate these "check digits". Verifai does: it calculates them as the most important fraud check. The next page

Type I

The **MRZ** type I is mostly used in national ID's and driving licenses, such as passports. The same information is included in the **MRZ** type 2, however the data spread around three lines instead of two. Every line of the type I MRZ code has 30 characters each.

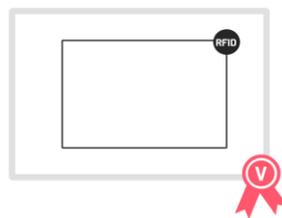
```
I<NLDSPECI20142999999990<<<<<<<<
6503101F2403096NLD<<<<<<<<<<<<<8
BRUIJN<<WILLEKE<LISELOTTE<<<<<<
```

| | |
|---|--|
| I< | The first letter of the MRZ indicates the type document. In this example, I indicate that the document is an identity card. |
| NLD | The three-letter code to indicate the issuing State. |
| SPECI2014 | Document code up to 9 alphanumeric characters. |
| 2 | Check digit on the document number. |
| 999999990<<< | Optional data at the discretion of the issuing state. In most states, the personal or social security number is depicted here. |
| 650310 | Holder's date of birth in format YYMMDD. |
| 1 | Check digit on date of birth. |
| F | Sex of holder (M, F, or <). |
| 240309 | Date of expiry of the document in format YYMMDD. |
| 6 | Check digit on the date of expiry. |
| NLD | Nationality of the document holder, represented by a three-letter State code. |
| <<<<<<<<< | Optional data at de discretion of the issuing State. |
| 4 | Overall check digit on the upper and middle machine-readable line. |
| BRUIJN<<WILLEKE<LISELOTTE<< | The primary identifier (family name) and the secondary identifier(s)(names of the person). |

id verification **done right**

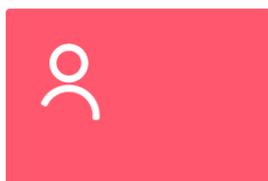
Certified eID chips

Since a couple of years, many countries are using eID, which is an embedded and electronic certified RFID chip in the identification document. All personal information which is displayed on the document, and additional information, such as **fingerprints and high resolutions pictures** of the person, are electronically stored on the RFID chip. The eID RFID chips are electronically certified and are hard to jailbreak or replicate by criminals. The certified RFID chips are readable by NFC hardware, which is a standard feature on almost all Android phones. The MRZ of the identification document may be seen as a 'password' to enter the chip: *the password is written in the passport*. This is called Basis Access Control (BAC). In that way, Verifai is able to read the eID and check whether the additional information on the chipset matches the information on the document. This can be seen as an additional safety check. Unfortunately, iOS does not support NFC. That is why you can only use Verifai's premium NFC verification tool on Android devices.

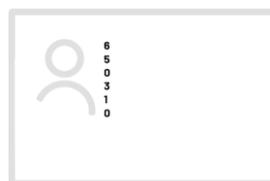


Fraud prevention features

Most countries are using other features which are, among most of the features, not immediately feasible and detectable by eye or ordinary (phone) camera. Special equipment is required to detect these fraud prevention features.



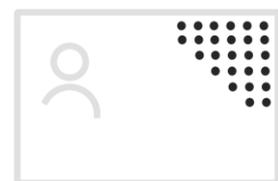
UV fluorescent image



tilted laser image



watermark



tactile relief

Facial recognition

The quality of photos used on official documents is too poor to be used for digital facial recognition. Moreover, since only one photo is not sufficient to digitally recognize dissimilarities between faces, commonly used recognition solutions (such as Apple's faceID) **use a large set of photos** taken from different angles to verify a person's identity. For that reason, the high-quality photo stored on the eID-chip unfortunately is also insufficient. Although this photo comes in handy when manually comparing the picture with a person, the fact that only one large quality image is stored makes it not possible to use digital facial recognition in a reliable way.

To ensure reliability and optimal safety, we have therefore decided not to support facial recognition.

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