# Match-on-card algorithms

Fingerprint on card comparison or Match-on-card technology is undoubtedly the most secure fingerprint authentication method.

It allows you to combine the storage of the reference template in a highly secured token like a smart card, and performs the comparison in its own processor. This technology ensures a privacy protection: no personal biometric information goes out of the token, prohibiting any fraudulent usage. The owner of the token (or card) remain the only master of its information.
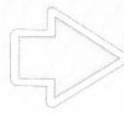
How it works

Data capture	Image/Signal processing	Comparaison	Decision	Authorization

Reference data
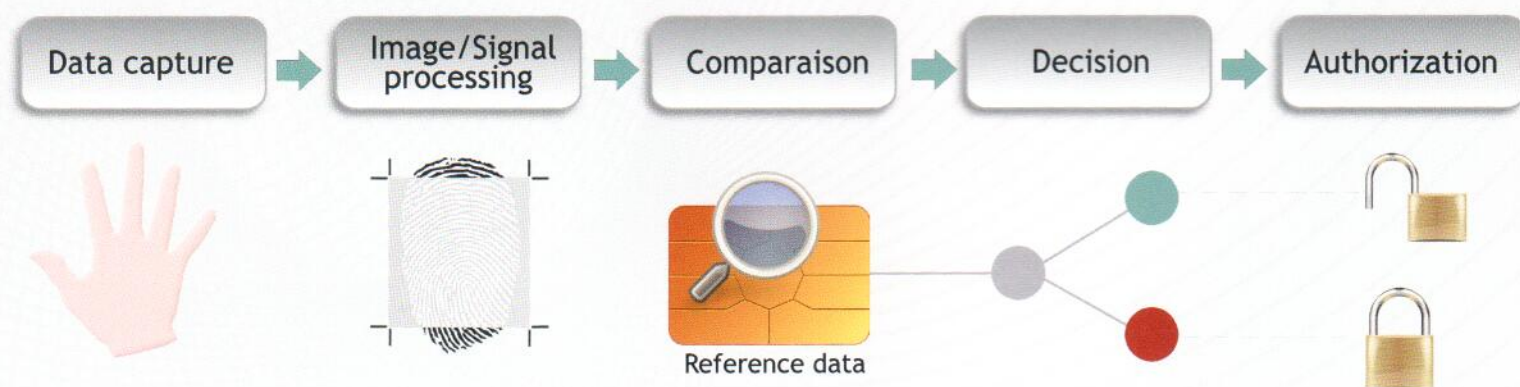
To perform on-card fingerprint comparison, the biometric interface device captures a fingerprint image and extracts biometric features (minutiae).

The created biometric data is then uploaded to the card for verification. The verification process is executed on-card.

If the biometric verification is successful the card's security state is updated and an appropriate signal sent to the back-end system.

Specifications

MINEX Compliant

Fingerprint Match-on-card V3

- Fast comparison time: < 80 ms
- Very low resource requirements (3 kB code, 317 bytes data)
- Template size: < 241 bytes
- PIV-compliant, certified by NIST in MINEX II program
- Maximum number of minutiae expected: 80
- Compliant with ISO/IEC 19794-2 compact card format
- Invariant to translation and tolerant to rotation up to 16°
- Easy implementation on any target (native code, single source file, no additional library needed)
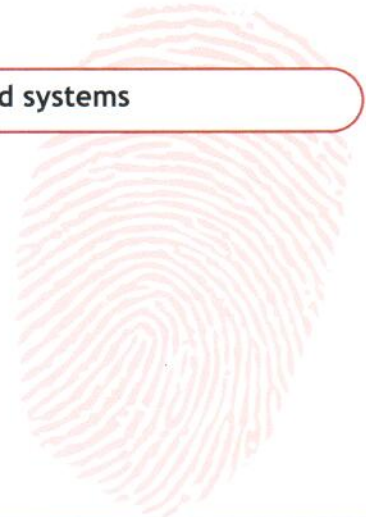- Flexible to specific requirements

The fastest and smallest MINEX certified algorithm worldwide!

Fingerprint Match-on-card V4

- Fast comparison time: < 150 ms
- Maximum number of minutiae expected: 128
- High interoperability with most minutiae extractors
- Invariant to translation and tolerant to rotation up to 40°
- Compliant with ISO/IEC 19794-2 compact card format
- Easy implementation on any target (native code, single source file, no additional library needed)
- Flexible to specific requirements
- Low resource requirements (<8 kB code, 1177 bytes data)
- Template size: < 385 bytes

Specially designed and optimized for card-based systems

id3 technologies
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