

Thales Cogent Multi-Biometric SDK for Biometric Enrolment, Verification & Identification

Identity & Biometric Solutions



MBSDK is the Thales Cogent multi-modal (Face, Fingerprint, Iris) biometric SDK. It makes enrolment, 1:1 verification and 1:few identification available on the most popular platforms.

MBSDK is a developer-friendly solution offering high performance in accuracy and speed together with security.

Multi-modal operations

Image Processing: conversion, segmentation, quality assessment, template extraction

Template Storage: local template database management with CRUD operations (create, read, update, delete) allowing offline usage

Verification: template matching against local database or any standard image (ISO-19794-4/5/6), calculation of matching score

Identification: template matching against local database or any standard image (ISO-19794-4/5/6), calculation of matching score and candidate ranking

Performance

The SDK embeds top-performance algorithms with the following outstanding performances:

| | Face (GPU) | Fingerprint | Iris |
|----------------------------------|---|--|---|
| Feature extraction speed* | 63 ms average | 64 ms average | 37 ms average |
| Quality check speed* | 85 ms average | 32 ms average | 5 ms average |
| 1:1 match* | 115 ms average | 112 ms average | 102 ms average |
| 1:50,000 match* | 319 ms average | 21 520 ms average | 1 754 ms average |
| Accuracy | <ul style="list-style-type: none"> FRR-6 = 0,27% Rank1 = 98,65% | <ul style="list-style-type: none"> 10-fingerprints: FNIR = 0.005 4-finger slaps: FNIR = 0.02 | <ul style="list-style-type: none"> FRR-4 = 1,03% Rank1 = 99.19% |

* 11th Gen Intel Core i5-11400H 2.70GHz, 1 CPU, 12 logical and 6 physical cores with GPU NVIDIA GeForce RTX 3060 Mobile

Thales Cogent Multi Biometric SDK

Security

- Encrypted on-device database with state-of-the-art encryption (AES-256), to prevent an attacker from stealing critical biometric data
- Use of a key derivation mechanism to prevent an attacker from stealing the encryption key
- Root and hook detection for Android: prevent use of the SDK on a jailbroken phone
- GDPR compliancy (deletion of biometric data upon request by individuals)

- Multi-language: Java, C#, C++ wrappers with ultra-low overhead
- Android versions 5.0 and above Backward compatibility
- Abundant reference documentation
- One-page quick start guide enabling a developer to create a MBSDK-based app in 5 minutes
- Sentinel EMS/RMS licensing

Developer friendliness

- Multi-platform: Windows x64, Linux x64 and Android ARM64

Innovation

Continuous research & technologies:

- Deep learning-based face, fingerprint and iris template extraction and matching
- 2D RGB Presentation Attack Detection RGB Contactless Fingerprint Capture

Features

| | |
|---|--|
| Multi-Channel Face Presentation Attack Detection | <ul style="list-style-type: none"> Camera: Intel RealSense D415 Platforms: Windows and Linux. |
| Offline matching | 1:1 and 1:n, against embedded database |
| Online matching | Extraction of templates compatible with Thales Cogent ABIS or any standard image (ISO-19794-4/5/6) |
| Supported languages | <ul style="list-style-type: none"> Windows: Java, C#, C++ Android: Java |
| Target operating systems | <ul style="list-style-type: none"> Windows 7 and higher Linux with GLIBCXX version 3.4.26 and higher Android 5.0 and higher |

Technical Specifications

| | Face | Fingerprint | Iris |
|---|--|---|--|
| Supported Image Formats | RGBA, PNG, BMP, JPG, NV21 (Android), ISO-19794-5 | RGBA, PNG, BMP, JPG, WSQ NV21 (Android), ISO-19794-4 | RGBA, PNG, BMP, JPG, NV21 (Android), ISO-19794-6 |
| Image quality assessment standards | ICAO (ISO/IEC 29794-5) | <ul style="list-style-type: none"> NFIQ and NFIQ2 scores Thales Cogent scores | ISO/IEC 29794-6 |
| Template extraction | Proprietary optimized format – 389 bytes | <ul style="list-style-type: none"> Proprietary optimized format – 600 bytes Interchange minutiae formats: ANSI-378, ISO-CC, ISO-19794-2 | Proprietary optimized format – 2481 bytes |
| Secured local database | SQLite, AES-256 | SQLite, AES-256 | SQLite, AES-256 |