

BioidTech



BIOID-IRIS RECOGNITION

TOP PERFORMANCE AT A GLANCE



BIOID-IRIS RECOGNITION MOST ACCURATE MODALITY

Singular Precision Technology For Ubiquitous Personal Identification

In BioID multi-biometric solutions, BioID-Iris plays a key role as it represents one of the strongest identification technologies that have been developed to date.

What are the reasons that make Iris such an ideal human identifier?

The Iris is the colored part of the eye that expands and contracts to allow more or less light in. This muscle is very rich in texture offering high information content. Iris Recognition is based on the concept of using features extracted from this texture rich area as a highly discriminative identifier. It works by photographing your eye and converting the information-rich pattern of the Iris into a digital representation that is unique to each individual.

Key benefit of Iris Recognition as a biometric is that the probability of wrongly identifying someone is extremely low.

The iris is an integral part of the eye, it is visible but protected by the overlying cornea, and one of the most unique structures of the human body. Iris is also a permanent biometric because its pattern remains stable throughout life and is formed even before an individual is born. The iris is also a well-protected organ leaving less room of intentional or unintentional damage or alteration. Furthermore, the verification process is real-time and there is a genetic independence, meaning that no two eyes are the same!

BioID-Iris is ranked as the fastest algorithm with the smallest template size for real world accuracy.

NIST IREX, Ongoing 2023

Single eye dataset accuracy **TPR at FPR 10^{-6} = 99.94%**

BIOID-IRIS ADOPTION DRIVERS

Key Features of the Use of the IRIS for Use in Personal Identification:

1. Extremely data rich pattern that can be photographed
2. Texture is formed before birth and is very stable over life time
3. Externally viewable and acquisition does not require contact
4. Not genetically dependent (no two eyes are the same) even twins!

That Results in a Highly Accurate and Unobtrusive Means of Identification:

1. Extremely Low False Accept Rates (probabilities to wrongly identify or not identify a person)
2. Non-contact biometric; no need to touch a scanner
3. Requires very little time to get familiar with its photo capture process
4. The feature vectors have very high dimensions and easy to compare making it the fastest matching modality

MODERN DEVELOPMENT APPROACH BASED ON EMPIRICAL DATA

VERSATILE



Seamlessly accommodates and matches iris images from a variety of capture sources, and from different population traits.

HIGH SPEED



High-speed algorithm thanks to multi-threaded template creation and multi-threaded matcher design doing tens of millions of matches per second per core

EASE OF INTEGRATION



The BIOID SDK can be easily integrated into any large-scale identity management system

CONFIGURABLE



The SDK handles most standard images and is also configurable to accommodate specific iris variations

MINIMUM HARDWARE FOOTPRINT



Thanks to its optimized design, low hardware and memory footprint required even very large implementations

CROSS PLATFORM



Support for multiple operating systems such as Windows and Linux

BIOID-IRIS DRIVES

THE FOLLOWING USE CASES



CIVIL ID

Pinpoint recognition capability in very large national database without significant loss of speed or accuracy using small hardware foot print. Iris along with fingerprint and face makes such programs inclusive as fingerprint quality is based on demographics and faces change over time



VOTER ID

Building voter database with unique identities and fast identification on Election day without slowing down voter traffic to eliminate voter fraud and promote fair elections



PERSONAL ID AND FINANCIAL SERVICES

Strong verification and identification with a biometric identifier that is extremely hard to spoof. Thanks to proliferation of cheaper IRIS authentication scanners and cell phones with iris scanners, iris recognition is covering the last mile



LAW ENFORCEMENT

Identification of subjects in mobile uses cases, deduplication during booking process and jail management



REFUGEE MANAGEMENT AND SOCIAL INCLUSION

Effective management of electronic identities for beneficiaries and the under-documented populations



ACCESS CONTROL

Access with the blink of an eye: non-invasive ID Verification for physical and logical access to highly secured premises and data assets

TECHNICAL SPECIFICATIONS

All biometric data is transferred as encrypted templates.

The SDK supports third-party encryption libraries

SUPPORTED OS	SUPPORTED HW	SDK LANGUAGES	HW REQUIREMENTS
<ul style="list-style-type: none">- Linux- Windows- 32 and 64 bit where applicable	<ul style="list-style-type: none">- COTS Hardware- Any type of GPU	<ul style="list-style-type: none">- C++- .net- Java	<ul style="list-style-type: none">- Recommended CPU: Intel Core- Minimum RAM: 1Gb- Recommended RAM: Based on gallery size

ADDITIONAL SPECIFICATIONS

- Supports standard images ISO/IEC 19794-6 compliant images (640x480 8bit jpeg 2000 grayscale images).
- Multi-threaded template creation and multi-threaded matcher.
- SDK memory footprint is less than 50MB.
- Windows and Linux OS, supports 64bit and 32bit architectures.
- Works on COTS hardware.
- Supports 1 or 2 irises per person/identity, the matcher returns one combine score from 2 iris per person.
- NIST IREX IX benchmark numbers (Intel Xeon E5-2695 v3 3.3 GHz)
 - Matching speed 250K plus per core
 - Iris detection, segmentation and template creation under 200 - msec
 - Fastest matcher @ 0.004ms template to template
 - Fastest matcher with smallest template (960 bytes) with single eye accuracy TPR > 99% and FMR of 10e-6

ABOUT BIOID

BIOID is a Swiss Technology company in the business of design, development and distribution of Identity Management solutions



Corporate Headquarters:
Geneva, Switzerland



R&D: US and Europe



Software Engineering: India
and US



Regional/Partner Sales offices:
USA, Switzerland, India, Indonesia

**FOR MORE INFORMATION
PLEASE CONTACT US**

info@bioidtech.ch

**LEARN MORE
ABOUT US**

www.bioidtech.ch