



## Benefits and Features

- High Quality Face, Finger and Iris Biometrics
- Top Tier Scores in Government Biometric Benchmarks
- Common API for All Three Biometric Modes
- APIs for C# and Java Programming
- Availability on Linux and Windows operating systems
- Convenient, low-cost development licenses

# Foundation Biometrics Software Development Kit (SDK)

## Technical Specifications

Foundation Biometrics is L-1's collection of core face, fingerprint and iris biometric software libraries. Foundation libraries are used in many L-1 products, from ABIS® 7 Search Engine, L-1's multi-biometric identification server and HIIDE™, to L-1's multi-biometric handheld enrollment and identification device. Available as Foundation Biometrics Software Development Kit (SDK), it enables solution engineers to develop biometric applications in each of the three biometric modes including face recognition, fingerprint and iris.

### Biometric Functions

The Foundation Biometrics SDK supports the development of the following classes of biometric applications in each of the three biometric modes:

- Enrollment applications that require biometric quality assessments of captured images as feedback to operators, point-of-capture image processing tasks such as slap image (fingerprint) segmentation and template creation
- Verification applications that require 1:1 comparisons of biometric images and/or templates
- Identification applications that require one-to-few search matching, typically for access control and rapid identification on a smaller scale

The Foundation libraries perform biometric image and template processing. Image capturing procedures are not conducted or triggered and require the deployment of separate devices. The customer is free to choose any camera support and database concept he needs as this is not in the scope of the Foundation.

### Programming Interfaces and Platforms

Foundation Biometrics SDK's libraries are available for use with the following operating systems:

- Windows 32-bit, C# interface
- Windows 64-bit, C# interface
- Windows 32-bit, Java interface
- Windows 64-bit, Java interface
- Linux 32-bit, Java interface
- Linux 64-bit, Java interface

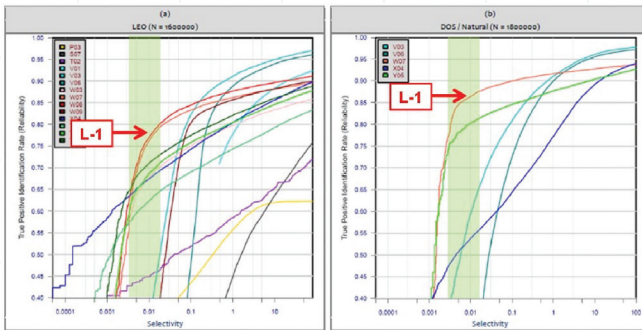
The Foundation's multi-modal architecture provides a single API for all three biometric modes. This makes it easy for developers to move from mode-to-mode and to build applications that use multiple biometric modes.

### Biometric Performance

All used biometrics have been tested in US government-conducted benchmarks with top-tier results.

## Face Recognition Results

The Foundation's most recent face recognition version, G9, was tested in NIST's Multi-Biometric Experiment (MBE) 2010 still face benchmark. G9 showed an ideal balance between the Reliability and Selectivity, with the highest True Positive Identification Rate at Selectivity around the common operational range of 0.01, as illustrated in the NIST graphs below:



Source: [http://biometrics.nist.gov/cs\\_links/face/mbe/MBE\\_2D\\_face\\_report\\_NISTIR\\_7709.pdf](http://biometrics.nist.gov/cs_links/face/mbe/MBE_2D_face_report_NISTIR_7709.pdf)

## Fingerprint Results

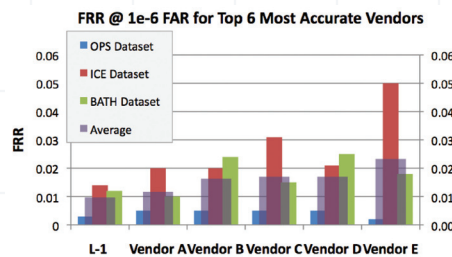
The Foundation's fingerprint biometric has been tested in NIST's continuously ongoing Proprietary Format Template (PFT) benchmark for several years. Foundation's most recent fingerprint version, BioEngine® 7 was reported in April 2010 in the top tier of fingerprint vendors as follows:

Vendor	SDK	1F TAR	2F TAR	Av. TAR	Rank	
A	2B	0.9907	0.9977	0.9942	1	
B	10	0.9903	0.9974	0.9939	2	
L-1	1Y	0.9879	0.9973	0.9926	3	
C	2E	0.9846	0.9969	0.9908	4	
D	1U	0.9837	0.9967	0.9902	5	
E	R	0.9833	0.9967	0.9900	6	
F	2C	0.9807	0.9967	0.9887	7	
G	2A	0.9811	0.9952	0.9882	8	
H	1Z	0.9752	0.9946	0.9849	9	
I	Q	0.9727	0.9945	0.9836	10	
J	1T	0.9672	0.9938	0.9805	11	
Seven other vendors					<0.9800	12-18

Source: [http://biometrics.nist.gov/cs\\_links/PFT/tables2f\\_040510.pdf](http://biometrics.nist.gov/cs_links/PFT/tables2f_040510.pdf)

## Iris Results

L-1 Identity Solutions' iris biometric, version 2 of the Daugman 08 (D08) technology, has been tested in NIST's IREX I benchmark. To date, D08-2 has proven to be the most accurate iris matching technology in the first and supplementary rounds of the IREX I benchmark averaged over all test databases. The results at FAR=1x10<sup>-6</sup>, the most demanding yet typical operational point reported by NIST, are summarized below. The Foundation Biometrics SDK contains its successor the Daugman10 technology, which is even more accurate and faster than the D08.



Source: [http://iris.nist.gov/irex/irex\\_supplement.pdf](http://iris.nist.gov/irex/irex_supplement.pdf)

In summary, according to the test results reported in the most important industry tests, L-1 Identity solution repeatedly was among the top performer. All three tested biometrics – face, finger and iris repeatedly ranked under the top three and guarantee for top quality operation environments.

© 2011 L-1 Identity Solutions Biometrics Division. All rights reserved. The trademarks identified herein are the trademarks or registered trademarks of L-1 Identity Solutions or other third party.

## SUPPORT PLANS

In the US, L-1 provides remote help desk support on 24/7 and 9/5 schedules. On-site support staff is available on an annual contract basis.

Internationally, L-1 partners with IT support specialists throughout the world to ensure your identity management solution is local in your time zone, local in your language and responsive to your needs. L-1 partners are extensively trained in administration and operation of ABIS® System and are backed by a 24/7 continuously-manned, expert help desk center staff.

## PROFESSIONAL SERVICES

L-1 offers competitive professional services that include:

- Installation and system commissioning
- Application design, integration and customization
- Training of IT and end user staff

5705 W. Old Shakopee Rd.  
 Suite 100  
 Bloomington, MN 55437  
 USA  
 Telephone +1-952-932-0888  
 Facsimile +1-952-932-7181