

Announcement of Further Biometric Testing for ILO Seafarers' Identity Documents

The International Labour Organization (ILO), established in 1919, is a Specialized Agency of the United Nations (UN). It is a tripartite organization, in which representatives of Governments, Employers and Workers take part with equal status. In June 2003, the ILO adopted the [Seafarers' Identity Documents Convention \(Revised\), 2003 \(Convention No. 185\)](#). The revision of the earlier Convention of 1958 was prompted by discussions held in the International Maritime Organization (IMO) reviewing measures and procedures to prevent acts of terrorism that threaten the security of passengers and crews and the safety of ships. ILO Convention No. 185, which came into force on February 9, 2005, is a binding international treaty for all Members that ratify it.

In order to successfully implement ILO Convention No. 185, Seafarers' Identity Documents (SIDs) issued in each ratifying State must be able to be used for verifying a seafarer's identity in every other State to which that seafarer travels in the course of his or her duties. Since this represents the world's first internationally interoperable biometric verification system, in March 2004, the ILO Governing Body adopted the technical standard, [ILO SID-0002 Finger Minutiae-Based Biometric Profile for Seafarers' Identity Documents](#), which is used to enable global biometric interoperability of Members' implemented systems (as specified in ILO Convention No. 185). The biometric storage format described in ILO SID-0002 was based on draft ISO standards dated October 2003, but minor modifications were made to satisfy the requirements of storing two fingerprint templates on a two-dimensional PDF417 barcode. Since the ISO standards were still in a relatively early draft form, no manufacturers were known to have products that supported these standards. Consequently, modifications to commercial products were necessary. In order to ensure that products supporting these standards, particularly the draft version of ISO 19794-2 specified in ILO SID-0002, could provide adequate interoperable performance on real seafarers, the ILO commissioned the ILO SID Biometric Testing Campaign to develop a list of compliant biometric products for Members to use when implementing ILO Convention No. 185.

The ILO Biometric Testing Campaign consisted of two phases. In the first phase, several biometric algorithm and sensor pairs (referred to as biometric products) underwent preliminary evaluation to determine those systems with sufficient conformance to the standards and basic matching performance to be included in the second phase of testing. Seven products were included in the second phase, which was conducted onboard a seafaring vessel. The experimental procedures, results, and analysis were included in the document, [ILO Seafarers' Identity Documents Biometric Testing Campaign Report - Part 1](#), wherein the tested systems are referred to as Products A through G.

Only two of the seven products, A and F, achieved the ILO targets for both native and interoperable performance, and so it became apparent that interoperability using the standard might not be as simple as had been anticipated. A follow-on study was

commissioned to investigate what had caused the problems in interoperability. During this study, supplementary guidance to the information contained in ILO SID-0002 was developed in order to provide clarity on certain areas in the standard that were suspected to be the source of problems. After the vendors modified their software in the light of the new guidance information, the images collected in the previous test were used in an off-line test with the new software. In this case, all of the major interoperability problems were resolved and three products (A, C and F) were determined to be interoperable at the ILO required performance threshold of 1% FRR at 1% FAR. These products are listed in a document provided to the ILO Governing Body which can be found at <http://www.ilo.org/public/english/standards/reim/gb/docs/gb292/pdf/gb-16-2-ad.pdf>.

The ILO plans to conduct further interoperability tests whenever there are sufficient requests from the vendor community to have products added to the ILO's list of products mentioned above. Each product will consist of a fingerprint sensor and a capture, enroll and verify algorithm. This document is an announcement of such a test which will take place approximately from November 2005 to March 2006 (depending on the number of products submitted for testing). Vendors must pay a fee of US \$30,000 for each product they submit for testing in order to defray the cost to the ILO of running the tests. This fee will be paid directly to the test lab and will not be refunded, regardless of whether the product becomes qualified or not.

The products will be submitted to the ILO designated testing lab listed below and verified to ensure that they can produce and read fingerprint templates in the form of the Biometric Information Records (BIRs) defined in Annex B of SID-0002. If they are conformant, then they will be integrated into a unified test control software and some preliminary interoperability tests will be run in the lab. During this period, any problems will be reported to the vendors and they will have an opportunity to provide updated software and/or hardware if they can do so within the time constraints of this phase of the test. In order to simplify integration with the test control software and to allow for both online and offline testing to be conducted, a simple API specification that must be satisfied by the software component of each product will be provided to those companies that indicate potential interest in participating in the test.

Those products that can demonstrate conformance and preliminary interoperability will be used in the second phase. During this phase approximately 150 people will enroll on each system and attempt to verify multiple times on each system against BIRs generated by the same system and by other systems. These test subjects will each visit the test lab twice, separated by approximately three weeks. After the on-line portion of the test, the images collected will be used in an extensive off-line set of cross-comparisons to allow all possible combinations of enroll on one system and verify on another to be explored for both genuine and imposter distributions. The original set of three products will then have their average interoperability performance score normalized to that of the previous test and any other products that can be added to the subset without raising that average interoperability error rate will then be considered as meeting the relevant requirements of the Seafarers' Identity Documents Convention (No. 185) referred to above.

The final results of this test will be reviewed by an extensive group of independent experts from the ISO/IEC JTC-1 SC 37 subcommittee on biometric standards, to ensure that there are no obvious errors in the test.

Once the results have been verified, the products considered as meeting the requirements of Convention No. 185, will be included on the ILO's list of products for use by countries implementing that Convention.

The envisaged timelines for this test are as follows:

Deadline for companies to express interest in participating – November 18, 2005.

Revised SID-0002 including supplementary guidance documents and testing API will be provided to company and negotiations can take place on any contractual arrangements or confidential disclosure agreements that a company may require as soon as the company has expressed interest in participation

Deadline for companies to agree to pay testing fee – December 2, 2005

Formal request by the test lab to submit the products – December 5, 2005

Deadline for the submission of products – December 21, 2005

Conformance and preliminary interoperability testing and integration into the test control software will begin as soon as each product is received

Deadline for companies to pay entire testing fee – January 13, 2005

Final decision on products to be used in live testing phase – January 20, 2005

Acquisition of live data using test subjects – January 23-March 3, 2006

Computation of offline tests and generation of test report – March 3-March 17, 2006

Review of test results by SC 37 – March 20-April 17, 2006

Inclusion of the products found to meet the requirements on the ILO's list for use by countries implementing Convention No. 185 – April 21, 2006

Please note the following:

1) ILO Designated Test Lab Contact Information:

Dr. John W. M. Campbell
Bion Biometrics Inc.
63 Glencoe Street, Suite 303
Ottawa, Ontario, K2H 8S5
Canada

Tel: 613-843-1908

E-mail: john@bionbiometrics.com

2) All questions about this test program should be directed to Dr. Campbell at Bion Biometrics, as listed above. Any questions and answers will be added to a FAQ which will be circulated to all companies that express interest in participation. The companies asking questions will not be named in the FAQ.

3) Bion Biometrics is under contractual obligation to ILO to protect all information supplied by the biometrics vendors in regard to this test. No information concerning the participation of a vendor in the testing or concerning the products submitted for testing will be disclosed except in the following cases and to the following extent:

- All fingerprint images and SID-0002 conformant BIRs produced during this test become the property of Bion Biometrics (which has an obligation to protect them based on the privacy agreement signed by the test subjects). Images and BIRs may be provided to any organization for the purposes of biometric testing, provided the identity of the vendor that produced the images and/or BIRs is not revealed. This is necessary because in the past it has sometimes been the only way to resolve interoperability issues between certain vendors.
- The names of the participating vendors will be provided on the ILO's request to representatives of the International Labour Office.
- The names of the successful vendors and an identification of their products found to be interoperable will be made public by the ILO.

4) Two copies of the hardware and software for every product must be submitted. One is for use in testing and one as a backup. At the end of the testing, if a product is not found to be in compliance with the ILO requirements, then both copies will be returned. If a product is found to be compliant, then both copies will be retained for so long as necessary to facilitate any future tests.

5) The present document provides information on the envisaged arrangements for testing. It does not in any way constitute an offer.