

# Biometric Consortium 2005 Conference

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**Topic:**

Fingerprint SDK (Software Development Kit) Testing

**Abstract:** This talk is an extension of the NIST “Studies of one-to-one Fingerprint Matching with Vendor SDK matchers” report which evaluated the accuracy of current SDK (Software Development Kit) based COTS (Commercial Off-The-Shelf) fingerprint matching systems for one-to-one verification applications [1]. Fingerprint matching systems from twelve vendors were evaluated. The two finger matching evaluation is an extension of that testing being used to evaluate the accuracy that can be achieved by combining the index finger scores to achieve a match. These are initial results based on the SDK matchers provided for the original single finger SDK testing with a more detailed evaluation being planned in the Minutiae Exchange Test 2004 (MINEX04) <http://fingerprint.nist.gov/MINEX04>. The more accurate matchers in the two finger SDK scoring were able to achieve true accept rates (TAR) in the range of .985 - .998 at a false accept rate (FAR) of 0.0001. Equal error rates for two finger verification of less than 0.001 are achieved by some matcher using operational quality data. A copy of a report and appendices giving details of the work described here is available at <http://fingerprint.nist.gov/SDK>.

**Biography:** Mr. Wilson has worked in various areas of computer modeling ranging from semiconductor device simulation, for which he received a DOC gold medal in 1983, and computer aided design to neural network pattern recognition at Los Alamos National Laboratory, AT&T Bell Laboratories and for the last 25 years NIST. He is currently the manager of the Image Group in the Information Technology Division.

This NIST group designed the first AFIS system for the FBI in 1968 and had worked on a wide range of pattern recognition system evaluation for the last 12 years. In 1992 and 1993 large the group conducted large scale OCR for the Census Bureau and the IRS. This was followed by one of the first comparative studies of statistical and neural network recognition algorithms in 1994. The group has worked on face and fingerprint system actively since that time.

When the Patriot and Border Security Acts were passed, NIST was mandated to provide accuracy and interoperability standards for border security. This mandate is presently being carried out in the Image Group. As a part of this effort NIST presently collected over 6M test images of faces and 128M fingerprints from 25M individuals for large scale testing of biometric systems. The results of these large-scale tests are available at the site: [fingerprint.nist.gov](http://fingerprint.nist.gov). Mr. Wilson received a Second DOC gold medal for this work in 2003.