New NIST software checks performance of biometrics applications against 2011 standard

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A new software test suite developed at the National Institute of Standards and Technology (NIST) allows local and federal agencies and other users of the NIST's revised biometric standard to gain higher confidence that the correct biometric information can be shared between agencies accurately and rapidly.

Biometric Conformance Test Software for Data Interchange Formats (BioCTS2012) includes a test suite designed to test implementations of the biometrics data standard ANSI/NIST-ITL 1-2011. Published in November 2011, the standard provides a defined method for digitally encoding and storing biometric data so it can be shared by the various ID systems used by law enforcement, military and homeland security agencies. It vastly expands the type and amount of information that forensic scientists can share and is being adopted around the world to identify people. Data standards like ANSI/NIST-ITL 1-2011 only work when they're implemented correctly in software applications. NIST researchers developed the new conformance testing methodologies and test tools to support the user community, product developers and testing labs in forestalling problems.

Conformance testing captures the technical description of a standard specification and measures whether an implementation faithfully executes the specification. BioCTS, for example, checks if the record of an iris image has the correct data, in the proper order, as called for by

the standard, so that it can be sent to, received correctly by and filed accurately by any user from the [Department of Homeland Security](#) to a small police department. The conformance testing provides programmers, users and product purchasers with an increased level of confidence in product quality and increases the probability of successful interoperability.

To support the conformance test suite, NIST scientists have developed two associated publications:

Conformance Testing Methodology for ANSI/NIST-ITL 1-2011, Data Format for the Interchange of Fingerprint, Facial and Other Biometric Information Release 1.0 (Special Publication 500-295). Developed by NIST with help from experts from government and industry, it provides computer programmers with the background information and methodology they need to develop a conformance test tool for the ANSI/NIST standard. SP 500-295 documents over 1,200 test assertions implemented in BioCTS 2012, to test for a range of record types from fingerprint images to iris images.

BioCTS 2012: Advanced Conformance Test Architectures and Test Suites for Biometric Data Interchange Formats and Biometric Information Records (NIST Interagency Report 7877) describes the implementation details of BioCTS 2012. NISTIR 7877 includes information on the conformance test architecture, for the ANSI/NIST–ITL 1-2011 standard and for conformance test suites designed to test implementations of biometric data interchange standards developed by Subcommittee 37–Biometrics of the ISO/IEC Joint Technical Committee 1–Information Technology and Biometric Information Records (BIRs) conforming to the Common Biometric Exchange Formats Framework (CBEFF).

BioCTS currently covers several key types of biometric data, including, for example, fingerprints; facial images; scars, marks and tattoos; and

iris images. NIST plans to extend the test tools to support additional biometric record types of the ANSI/NIST-ITL standard as well as other international biometric standards. Information regarding BioCTS 2012 testing architectures, code structure, and other software design details is provided in NISTIR 7877.

"The goal of this project and future work is to support users, product developers and testing labs in a timely fashion by making the conformance test tools available as quickly as possible after new standards are developed," explains Project Manager Fernando Podio.

 More information: The BioCTS software may be downloaded at www.nist.gov/itl/csd/biometric … /biocta_download.cfm Conformance Testing Methodology for ANSI/NIST-ITL 1-2011, Data Format for the Interchange of Fingerprint, Facial and Other Biometric Information Release 1.0 (SP 500-295) is available at www.nist.gov/itl/csd/biometrics/ansi-nist.cfm BioCTS 2012: Advanced Conformance Test Architectures and Test Suites for Biometric Data Interchange Formats and Biometric Information Record (NISTIR 7877) is available at csrc.nist.gov/groups/ST/BiomRe … OVED_NISTIR_7877.pdf

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