Biometrika

FX3 sdk
FX3 Software Development Kit

FX3 is a collection of powerful software modules for fingerprint acquisition, processing and matching.

The use of highly innovative feature extraction and pattern recognition algorithms, derived from intensive research in cooperation with universities, makes FX3 extremely accurate and efficient.

FX3 SDK provides the developer with an ideal platform for running and debugging complex fingerprint-based applications.

Technical specifications

Features
- Multi-modal matching for high security and reliability
- Gray-scale features extraction
- Multiple templates (more than one fingerprint in the same template)
- Template Encryption

Supported Sensors
- Fx2000, Fx3000 e HiScan
- Functionalities for scanner management and configuration
- Fingerprint acquisition functionalities

Functionalities
- WSQ support
- BioApi compliant (1.1)
- Advanced control for Fx3000 (Match On Board)

Interface and Development
- Supports all main programming languages (C, C++, VB6, VB.Net, Java,..)
- Operating system: Windows 98/NT/2000/XP/Vista, Linux

Multi-modal matching	To improve recognition accuracy, 5 distinct matching modules are used. Each module is based on a set of different features. The use of only Minutiae (as most of the recognition algorithm do), in low quality fingerprint images, does not provide a sufficient level of accuracy.
Direct gray-scale feature extraction	Minutiae, and all other used features, are directly extracted from the gray-scale image by means of an innovative algorithm (requires no image binarization) in order to avoid the loss of important details and to reduce identification time.
Fast and very accurate	Less than 0.5 seconds are necessary for feature extraction and (1-1) matching on a Pentium-III 500 MHz. Quoting absolute FRR and FAR performance does not make sense: these measures are strongly dependent on the database used for the test. Over an internal database we measured an Equal Error Rate (i.e. FRR = FAR) equal to 0.0012 (0.12%), and a ZeroFAR (i.e. FRR when FAR=0) equal to 0.0034 (0.34%).
Multiple template and Encryption	The software provides primitives for enrollment from multiple fingerprints images, and key-management routines for storing and transmitting encrypted templates (128 bit symmetric encryption).
Configurable	Developers can adjust some algorithm parameters (e.g. matching speed, max. template size) for the optimization of performance for each specific application.
Support several sensors	All the Biometrika scanners (including Fx2000 and Fx3000) are supported by FX3 SDK. Images and templates collected or created through FxLock and FxIntegrator are also compatible with FX3 SDK.
WSQ Support	FX3 permits to save Fingerprint Images in WSQ compressed format.
Control of the Match-On-Board capabilities of Fx3000	FX3 SDK includes wide range of functions that control the Match-On-Board capabilities of Fx3000; these comprise on-board feature extraction and matching, storage of information on the scanner Flash memory and access to the encryption functionalities.
Easy development	The SDK have been specifically designed to facilitate for an easy application development and provides "graphic dialogs windows" for the most commons tasks (user enrollment, on-line acquisition, …).
Windows 95/98/NT/2000/XP, Linux	The SDK is Windows-95/98/NT/2000/XP, Linux and MS OS X compliant (under development) and supports all the usual programming languages and tools (including Visual C, Visual Basic, …).

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