

# AFIS PRODUCT

FACE TECHNOLOGIES, OR FACE, AS THE COMPANY IS COMMONLY REFERRED TO, IS AN IT SYSTEMS INTEGRATOR SPECIALISING IN CARD TECHNOLOGY AND BIOMETRICS. FOUNDED IN 1993, WE HAVE IN EXCESS OF 15 YEARS' EXPERIENCE IN THIS SPECIALISED FIELD. THE FACE TEAM HAS SPENT YEARS DESIGNING, DEVELOPING, IMPLEMENTING AND OPTIMISING NUMEROUS IDENTIFICATION SYSTEMS FOR COUNTRIES ACROSS THE CONTINENT.

## FACE: HONING THE FINE ART OF ACCURATE IDENTIFICATION

Face Technologies has many years of experience with implementing and operating an Automated Fingerprint Identification System (AFIS), having implemented it at multiple sites. An AFIS can be implemented to ensure that no applicant is registered twice. This will be achieved by searching for fingerprints in the database and identifying individuals based on their fingerprints.

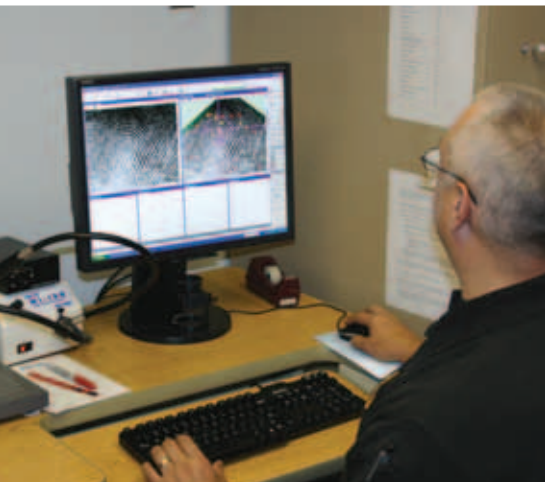
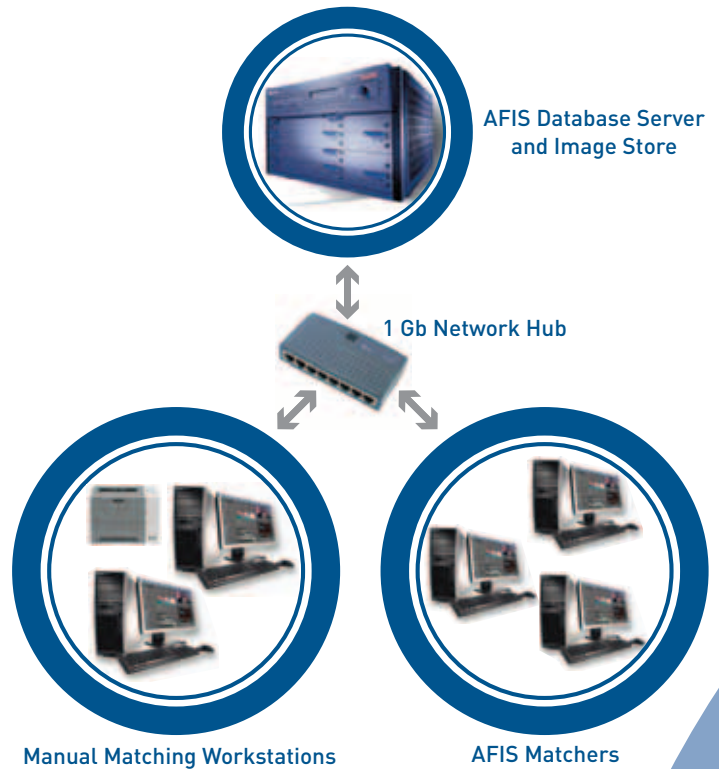
Based on these experiences, we have designed and built an AFIS that can be customised and be integrated into our existing solutions. This integrated AFIS makes use of the Innovatrics finger-matching algorithm, one of the leading algorithms in the world. The proposed solution would include an AFIS that can be used for de-duplication of applicant registrations. The integrated AFIS saves costs and development time and makes use of standard hardware with the associated reduction in maintenance costs.

## FASCINATING TECHNOLOGY AT YOUR FINGERTIPS

The AFIS package contains everything necessary for setting up complex identification applications, including a high-speed matching engine, fingerprint search-database management and client-server architecture. AFIS has a scalable architecture, allowing the matching server component to be installed on several matching computers

to distribute the workload and increase matching speed. Therefore, it can search large-scale databases ranging from hundreds of thousands to hundreds of millions of fingerprints.

## AFIS SOLUTION ARCHITECTURE



## MANUAL MATCHING WORKSTATIONS

To minimise the false acceptance rate, finger images with a borderline score are marked for manual matching; a process where a trained individual views the finger images and makes an informed decision. Any number of matchers can be deployed to streamline the matching process. The number of minutiae that has to be compared, as well as the time available for the process, determines the number of matchers that has to be deployed.

Face Technologies offers two methods for handling the identified borderline scores:

### 1. MANUAL FINGER VERIFICATION

The manual matcher is an application that can be used to visually confirm duplicates. A trained fingerprint expert can use the application to view finger images in order to do a visual evaluation of the characteristics, mark minutiae points and eventually decide on the authenticity of fingers marked as duplicates. The application filters finger images according to similarity score. The operator can visually view two finger images adjacent to each

other and use various image manipulation options, such as zoom, rotate, etc. to compare similarities. The minutiae points can optionally be overlaid onto the images to simplify comparison. The operator can then mark minutiae points on both images to assist in a similarity decision. Manual matching is optional. The matcher application can be configured to enable all duplicate decisions to be automated. Strong auditability and security are maintained throughout.

### 2. MANUAL FINGER-MATCHING USING ADDITIONAL INFORMATION

The manual matcher using additional information is an application that can be used to visually confirm possible identified duplicates. A trained operator can use the application to compare the text data, as well as the photograph data of the two possible duplicates and then decide on the authenticity of fingers marked as duplicates.

A visual dashboard could optionally be displayed that shows valuable performance statistics, as well as enable the operator to stop and start the matcher application. Various reporting and data validation options are also available from within the optional user interface.

## INNOVATRICS ALGORITHM

Innovatrics owns a state-of-the-art fingerprint recognition algorithm, which has proven to have many unique features:

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