




NEC Biometric Solutions



Empowered by Innovation

NEC



With the heightened current world security climate and people's increased awareness of security issues - biometric technology is becoming more readily recognised as a security control mechanism.

NEC have been delivering robust biometric solutions for over 30 years and its unrivalled reputation has ensured that we have become one of the most renowned biometrics specialists in the world.



NEC Biometric Solutions

Pedigree of NEC Biometrics

NEC has been developing their Automated Fingerprint Identification System (AFIS) since 1969. We have retained our leadership by continually advancing our technology. NEC has designed, manufactured, installed and also supports the vast majority of AFIS solutions throughout the world; the world's largest biometric databases are implemented by NEC.

NEC has always remained at the forefront of biometric research and development. Our portfolio of biometric solutions includes one of the world's most accurate 2D facial recognition systems and we have recently launched the world's first commercially available 3D facial recognition system. We are one of the only vendors able to complement fingerprint biometrics with both palm and hand ridge capabilities. Additionally we are leading the research and development of DNA recognition systems for the law enforcement market. Each of these technologies has its place within particular solutions and NEC can assist customers in selecting the most appropriate level and type of solution for their individual needs.

These biometric methods may be used either independently or as part of a more complex solution, in order to achieve the desired security levels.

Identification versus Verification

Biometrics serves two major purposes: Identification and Verification.

Identification is the process of establishing the identity of an individual by matching a live scan against a database of biometric samples of known people, ie 1:n matching.

Verification is the process of verifying the identity of an individual by matching a live scan against a previously captured biometric sample, ie 1:1 matching.

NEC's solutions can authenticate users onto systems and premises using either of our identification or verification techniques.

NEC's capabilities in 1:n searches stems from our vast experience in developing law-enforcement applications, where the identification of perpetrators is a key requirement of the solution. This uniquely enables NEC to provide organisations with 1:n matching capabilities at user enrolment, preventing the fraudulent or accidental issuances of multiple digital IDs to the same person.

NEC enables 1:1 matching against biometric samples stored on all common tokens, such as smartcards. This allows organisations to control access to corporate resources, such as networks and premises.



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Fingerprint Biometric Solutions

NEC has dedicated more than a quarter of a century to providing the most efficient and accurate fingerprint solutions and is today the world's leading supplier of fingerprint biometrics. At the centre of all our fingerprint solutions is PID (Positive Identification) - the world's most accurate fingerprint matching algorithm. This enables us to provide our customers with the lowest false accept and false reject rates - with the fastest 1:n database searches for identification.

NEC AFIS Systems

NEC's desire to make technological advances in its products has resulted in the development of one of the world's most advanced ten-print AFIS system. **AFIS21** is the next generation of automated fingerprint identification systems which has been developed to provide automatic quality control, automatic pattern classification, automatic verification and automated workflow. Additionally NEC is the only AFIS vendor that can provide hardware, software, and customer service under one name with a single point of contact.

IntronNavi is a new PC-based AFIS solution for the capture, storage, search and matching of fingerprints. It is based upon NEC's proven technology. The IntronNavi system is a fully scalable solution that can be used either as a standalone workstation for processing tens of thousands of fingerprints without the need for connection to further workstations, or a solution consisting of workstations connected to a central server.

NEC Advanced Digital Identity Solutions

NEC's Advanced Digital Identity Solutions facilitate the management of digital identities within an organisation and provides fully comprehensive access control to all corporate resources, including physical and network access control. Our modular approach allows for a fully tailorable deployment plan, integrating PID with tokens such as smartcards, or enabling the use of fingerprints alone to identify and authenticate people.

NEC **TouchPass** is one of the leading biometric solutions for employee authentication and network authorisation based upon fingerprints alone. TouchPass can be used singly or as part of a more complex solution. It is the only solution available that eliminates the need for both

usernames and passwords by simply requiring users to place their finger on a fingerprint reader which then authenticates their logon attempt, whilst supporting tens of thousands of registered network users.

Other corporate authentication products include **ACUSmart** - an intelligent physical access control unit, which can incorporate various biometric technologies into a premises entry system.



Facial Biometric Solutions

The face is an important aspect of human behaviour, whilst also being a basic instrument of social interaction.

NeoFace is a high-performance advanced biometric facial recognition solution from NEC demonstrating further their advanced technological capabilities.

Biometric facial recognition systems such as NeoFace will increase in significance because they facilitate touch-free processes without the need for contact or interaction with the person being identified. NeoFace is a multi matching facial recognition system which works using a combination of eye zone extraction and facial recognition techniques, providing users with a short processing time and high detection rate. NeoFace supports various graphics and video formats - as well as live camera feeds - with the images being capable of being compared in either a 1:n search/match or a 1:1 match.

Whilst NeoFace is a highly effective facial recognition system, it is a 2D system. In line with its reputation for continual advances in technology, NEC has also developed **3D High-end Range Finder Fiore**. This device combines hardware and software in one comprehensive solution, providing exceptionally precise and extremely fast results. The system can import structural data and 3D models in 0.6 seconds.

Example of NEC Biometric Solutions

NEC's vast experience in biometrics allows us to build solutions encompassing a large range of requirements:

Law Enforcement Solutions

Since originally developing its AFIS solutions for the Japanese National Police Agency in 1969, NEC now supplies biometric solutions to the majority of the law enforcement market.

Examples:

- US Department of Justice
- Saudi Arabia National Police system
- Turkey National Police system
- Spain National Police system
- and 1000s of police solutions world-wide

National ID Cards

NEC's biometrics solutions have been incorporated onto numerous national ID schemes. Biometrics serves to accurately authenticate valid use of national ID cards by citizens. Additionally, our 1:n search capabilities are vital at the point of enrolment in the scheme.

Examples:

- Macau Multifunctional National-ID Card solution - 540,000 smart ID cards were issued to Macau residents.
- South Africa - South African Home Affairs National Identity System (HANIS) - a fully integrated 10 fingerprint identity solution issued to over 45 million adults. Currently the world's largest biometric database.
- Chile

Immigration and Border Control Solutions

Biometrics is serving an increasingly vital role in the implementation of border control. Many countries are now progressing the implementation of biometric passports and visas, particularly now with the increased security footing throughout the world.

Examples:

- Singapore immigration and border control for work visa holders
- Bundesdruckerei, passport and Euro printers for Germany are developing advanced border control and document verifier solutions using NEC biometrics.

Corporate Identity Management Solutions

NEC's biometric solutions can be incorporated into a company's physical and electronic security solutions and can include any combination of the following:

- Identity Lifecycle Management
- Reduced Costs and Increased Security
- Biometrics (fingerprint, facial and signature)
- Identification and Authentication
- Single Sign On
- Physical Access Control
- Network Access Control
- Remote Access Control
- PKI and Smartcards
- Encryption and digital signature services
- Cashless Vending
- Systems Integration, Consultancy and Change Management

