ABIS solution

The Zetes ABIS solution (Automated Biometric Identification System) detects duplicate records using information within consolidated databases. ABIS is the essential tool to ensure a unique identity of persons and prevent identity fraud whether this involves citizens, voters, civil servants, military personnel or any other group.

Control of multiple records or duplicate removal

Whether under a national population register of, an election, the production of secure documents or managing a database, the official authorities have the responsibility to ensure that these databases only contain unique records and that each person has a corresponding unique identity.

Removing duplicates from a biometric database is a method used to detect multiple records of the same person. The biographic and biometric data for each new record is analysed and compared systematically with the data already stored. These comparisons can vary in number, ranging from a few tens of thousands to several hundred millions of records.

The technology solution used to deal with these issues is ABIS (Automated Biometric Identification System). It is a highly-efficient global solution capable of carrying out identification, authentication and duplicate removal operations, often in a very short space of time. It also includes appropriate software solutions used to control and monitor decisions by suitably competent operators.

The Zetes ABIS solution detects biometric duplicates on the basis of:

- fingerprints
- iris
- identity photo (facial recognition)

Each project specifies the choice of the biometric element to be analysed. These elements can also be used in combination.

ABIS management system

To ensure optimum use of ABIS, Zetes has developed an associated management system. An automatic search for duplicates can be launched either at every new recording in the database or selectively, when checking identity (for example, for border controls).

The management system also includes a visualisation tool, so that a government official can easily compare all the information (photo, fingerprints, biographical information, etc.) relating to the duplicates detected by the ABIS. It can then quickly establish that it is indeed a possible multiple record and undertake the necessary actions.
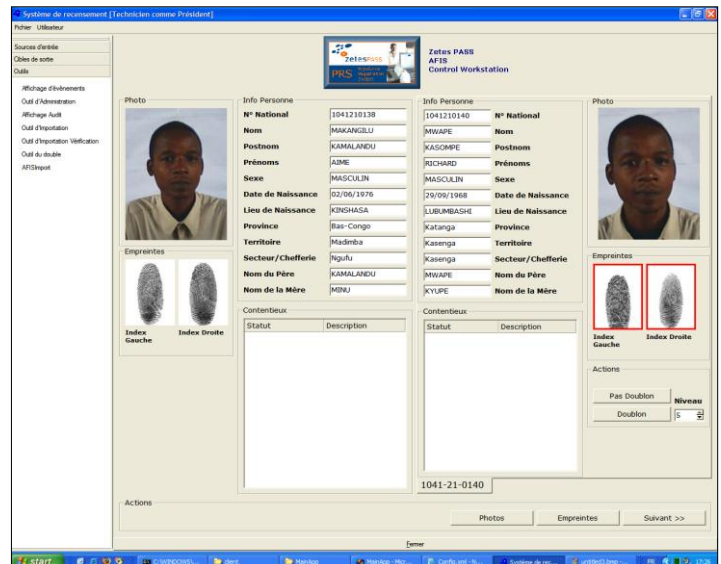
Autonomous Management or Service Centre

There are two possible configurations.

- Autonomous Management: the servers that can store and analyse data are installed in the requesting country.
- Services Centre: the servers and licences are rented out and can be installed temporarily in the requesting country or be used remotely by transferring only digitised biometric information and feedback of multiple records.
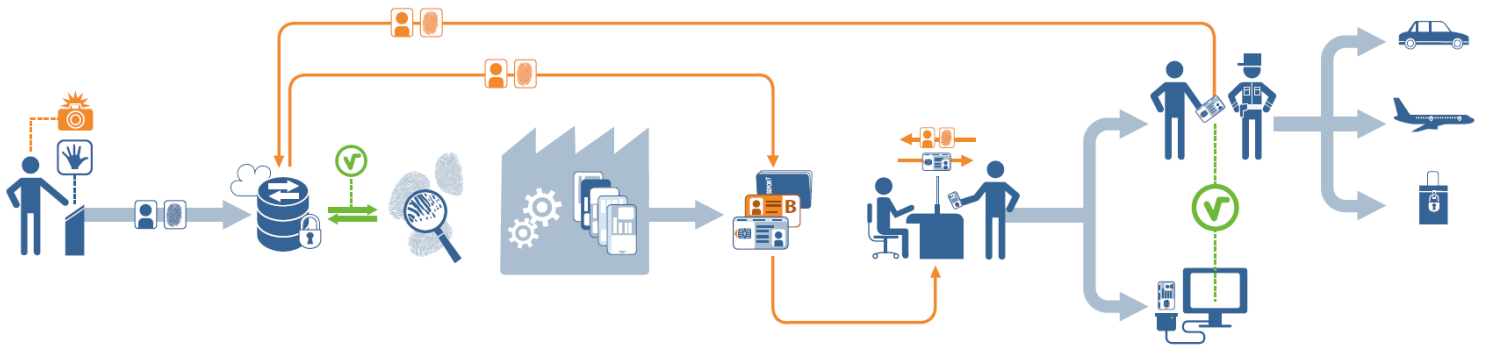
When a population database does not exist and has to be created from scratch, large software and hardware resources have to be implemented to process the biometric data. As these resources are designed to process a large amount of information in a short space of time, they are normally over-dimensioned for the activities that follow once the major work has been completed.

The costs linked to these infrastructures can be avoided by opting for the ABIS Service Centre. The investment is rests with Zetes who is also responsible for processing data and maintaining the infrastructure. This model has the advantage of reducing substantially the initial cost of the project and accelerating the implementation, thereby saving additional time. The biometric data is processed anonymously to guarantee the confidentiality and privacy of individuals.

In some circumstances, for example an identity card project or after an initial phase where data has been processed in the AFIS service centre, an "in situ" installation may be advisable. In this case, the hardware and software are installed directly in the customer's environment and the system is operated and maintained by its own engineers. They undergo in-depth training provided by the Zetes experts.

Zetes has been accreditation with the NATO Secret Defence and ISO 9001 and 27001 certifications for data confidentiality and information security. Zetes can therefore work in total transparency and with the credibility required when handling confidential and sensitive information.

The Zetes ABIS system also complies with the standards NIST ITL-1 2007 (Interface), ISO 1974-4 (Templates), ANSI/INCITS 378 and has undergone NIST assessments: MINEX, IREX, PFT, FpVTE, etc.

Secure processing of information
A variety of devices allow extremely secure processing of information on registered individuals:
- encrypted transfer from the database to ABIS to make it impossible to manipulate information
- using a unique identifier associated with photographic and biometric information. In this way, if the Service Centre configuration mode is used, only government

officials can access the biographical information (text) of registered individuals.

An upgradeable solution
The Zetes ABIS solution can accommodate voluminous databases:
- population registers
- electoral rolls

and more restricted databases:
- police and military personnel, civil servants, etc.

References

The ABIS denomination is used for projects that required two biometric elements simultaneously (comparison of fingerprints and facial or iris recognition) and AFIS (Automated Fingerprint Identification System) for projects that used only fingerprint comparison.

- **Democratic Republic of Congo:** ABIS electoral on more than 31 million records (fingerprints and facial) in 2013, AFIS for the 2006 elections as well as for checking identities of police and military personnel since 2007.
- **Côte d'Ivoire**: AFIS for biometric and visa passport projects since 2008
- **Benin**: AFIS electoral (four million records) in 2010
- **Sierra Leone**: ABIS electoral (ABIS Service Centre) of 2.6 million records (ABIS Service Centre) in 2013
- **Burundi**: AFIS for identity checks of civil servants and military personnel since 2009
- **BioDev II**: AFIS for the Schengen Visa in 2007
- **Togo**: AFIS electoral of about three million records in 2007 and 2010 (ABIS Service Centre) and ABIS in 2013
- **Senegal**: ABIS (fingerprints + iris) for checking Biometric Visas since 2013

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