TiPass
The Global Secure Solution for Fraudulent Identity Detection and Document Forgery Inspection
TiPass

System Definition

TiPass is an overall, modular and last generation solution to automate, speed up and register any personal identification and access to secure environments, providing an advanced service for capture, identification, extraction, authentication, inspection and export of information from different “identity tokens”. TiPass automatically checks and verifies all types of secure IDs, travel documents (passports, id cards, visas, driver licenses, etc), biometrics (fingerprint, face, iris, hand, etc) or any other existing identification token, determining within seconds their authenticity, and facilitating at the same time the information acquisition, thus eliminating any human error during the whole process.

Technical specifications

- J2EE system and software based on three-layer Web-based software architecture, deployable in web-mode or standalone mode.
- System developed based on market standards: Web, J2EE, Java, C++, XML, relational databases, etc.
- On-line operation (templates updates and access to central system) and off-line operation (autonomous and batch mode).
- Univocal identification for each identity token based on market leading OCR (optical character recognition) engine and advanced computer vision algorithms.
- Automated advanced authentication and verification checks for all present image patterns and security features (last generation image processing and pattern recognition algorithms, 30 or more checks per document.
- Integration with the best biometrics solutions on the market (fingerprint, facial features, iris, etc.) and capability of new integration with BSP (Biometric Service Providers) biometrics in line with the BioAPI 1.1 standard.
- No or minimum operator intervention.
- Designed to support new intelligent electronic documents: e-passports with RFID, e-IDs with contact chip, new e-visas formats, etc.
- Dynamic and open documents database; real time updates of documents / security features / detection.
- Advanced administration tools which allow the client (optionally) to administer, maintain, audit, analyse, test and train the system and results.

Functionality

The TiPass software suite offers a wide range of products and configurations for implementing the most demanded security systems solutions in the market based on its different configurations, functionality and levels included, as well as services available. Moreover, it provides additional tools and modules for business intelligence analysis. TiPass’s main functionalities, products and tools are described below.

TiPass Verifier is a document authentication solution for automated capture, identification, and verification of personal IDs and travel documents.

TiPass databases are defined and trained based upon real document templates, and Keesing worldwide reference databases.
8 seconds

TiPass automated processes are reliable and fast, between 2 and 8 seconds per document, according to type.
**Capture & Identification**
- Image capture in different lights: White, IR, UV, coaxial
- Data capture on multiple formats: MRZ, VIZ, RFID chip, PCSC chip, photo, etc.
- Live biometrics capture: fingerprint, face, iris, hand geometry, handwritten signature, etc.
- OCR (optical character recognition) and computer vision algorithms in images
- Univocal identification of each identity token: country, type, model and version of the document, 1:N, integration with AFIS systems, etc.

**Extraction & Verification**
- Extraction and verification of check digits in data page (MRZ checksum)
- Secure information extraction from RFID chip and PCSC contact chip
- Data comparison in multiple formats: MRZ, VIZ, RFID, PCSC, etc.
- Security features inspection and image pattern matching (B900 ink presence, uv dullness, image patterns presence/absence in white, IR, UV, coaxial, etc.)
- Document data vs. holder 1:1 crossmatching: 2D and 3D face recognition, fingerprint, iris, hand geometry, signature, etc.

**Validation & Export**
- Results, analysis and entry/exit register
- Export and integration with other systems
- Cross checks against police databases, black lists/control lists, employee lists, visitors, etc.
- Business intelligence: analysis, data mining, audit, reporting, monitoring, training, testing and prediction.

TiPass Verifier is a document authentication solution for automated capture, identification, and verification of personal IDs and travel documents, in a fast, easy and secure way. The system shows the operator the overall verification result and, optionally, all the physical features, detailed checks, procedures, and data extracted from the document. Furthermore, the system simultaneously sends in the background all the information to other external systems for analysis and cross-checking (against police databases, blacklists, etc.). This enables the system to fully analyse, register and lastly accept or deny the entry/exit access to people in a specific environment.
TiPass

**TiPass Gate is the automated border crossing gate solution** of TiPass, for identifying electronic document holders in a secure, fast and efficient way through automated gates where data capture, document verification, 1:1 biometrics matching (fingerprint, face recognition, etc), cross-check with external systems, and final access are performed all at once. The application guides the traveller through the whole process in a straight-forward, easy and intuitive way, finally allowing or denying access through the eBorders.

**TiPass Access Control provides access control solutions** (hours, days, people) to restricted areas and secure environments, and attendance & presence control solutions. Using specific TiPass plug-ins, the system is able to connect to any data entry register in order to verify people’s authorisation to access a restricted area at specific times. Furthermore, the system is capable of exporting the required data to other external systems with the aim of integrating and adapting to the environments where it is being used. For instance, it can be used in hospitals, companies, banks, notary publics’ offices, casinos, etc.

**TiPass Database includes the TiPass database repository** where all the necessary information is stored, regarding each and every secure document template to be verified by the system (including data, images, areas of interest, patterns, security features, etc.) together with the procedures and all actions to be carried out on them.

Depending on the environment, users, and required functionality, TiPass Database will store specific templates, actions and functionality levels, which can include both standard travel documents (ICAO 9303; MRTD & eMRTD), as well as non-standard travel documents, driver licences, ID cards or any other secure document to be verified.

TiPass databases are defined and trained based upon real document templates, and Keesing worldwide reference databases.

**TiPass Administrator provides a simple, fast and enormously intuitive way of managing the TiPass Database**, enabling the administrator to extend or define its own document template repository, as well as the edition, deletion or addition of new templates, the configuration of its security features and specific verification procedures. It includes a wide variety of last generation computer vision tools for data and image processing, patterns definition, execution, testing, etc.

Additionally, other tools are available for business intelligence; data mining, statistical analysis, etc, with the purpose of knowledge-oriented improvement in the use of TiPass stations, allowing the user to know what has happened (reporting tools), what is happening (real-time dashboard for monitoring), and what will happen (test / learning / training), as well as a fully scalable way to explore why it happened (data mining, analysis).
TiPass

TiPass Update Services
In addition, the TiPass product catalogue also includes database and software updating services for distributed configurations. These services keep the different TiPass stations (Verifier, Gate or Access Control) updated both on a software and database level, through secure communications.

Why TiPass?
- **Flexibility**: It provides in a generic way an advanced identification, verification, validation, extraction and exportation service of information from different identity tokens (passports, eIDs, biometrics, etc.)
- **Customization**: Meets the requirements of different environments, from complex scenarios such as border control to more simple ones where only biometric identification or automatic data extraction of any identity document is required.
- **Versatility**: Allows configuration versatility of the selected solution, making possible the disposal of standalone verifiers and administration stations as well as geographically distributed configurations with centralized databases, administration and verification services.
- **Automation and speed**: Automated process, reliable and very fast, between 2 and 8 seconds per document, according to type, inspection, included functionality levels, and capture hardware.
- **Hardware independent**: Hardware independent software, not only at the integration interface level but for the computer vision algorithms used (scale, resolution, translation, rotation and colour invariance). Interfaces developed for the most demanded capture hardware devices on the market (passport readers, fingerprint readers, facial cameras, etc.).
- **Evolution and investment**: The first security solution for the present and the future that allows a balance between benefits and costs and avoids obsolescence problems.