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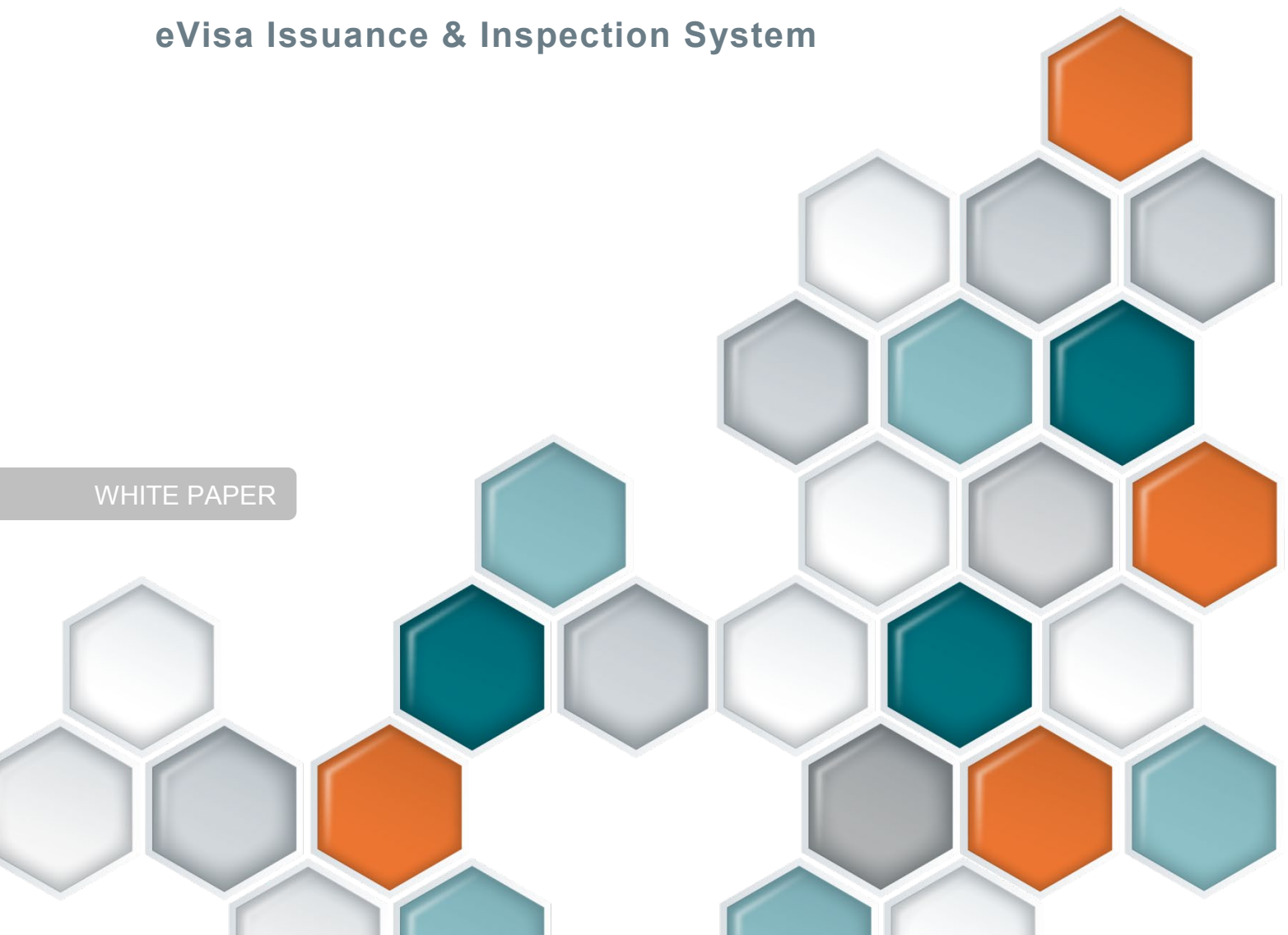
High Tech International

**Mühlbauer ID Services GmbH**

# VISA SOLUTION

eVisa Issuance & Inspection System

WHITE PAPER

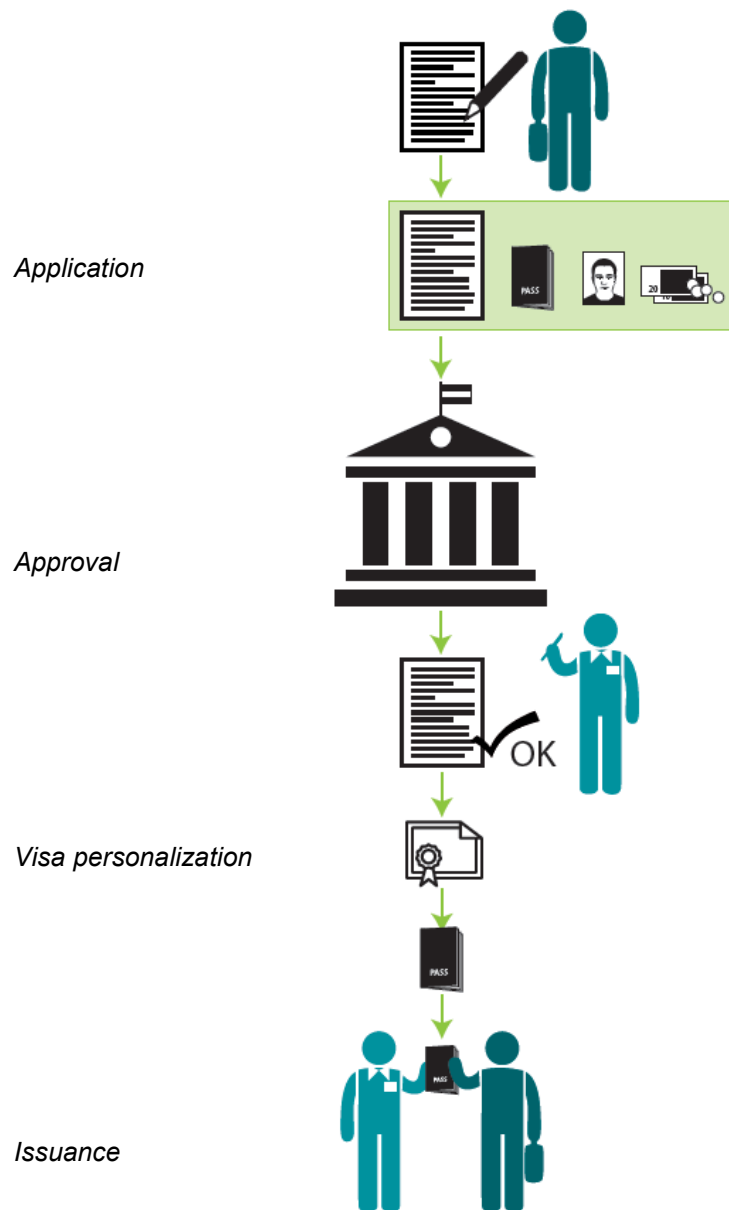


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# 1 Global Trends

## Procedures

Any visa application process is usually based on certain universal procedures. It is the execution of the individual steps that makes the difference between the solutions. The traditional process is as follows:



The procedural rules vary from one country to another. It can be mandatory for the applicant to appear at the embassy in person, e.g. for capturing biometric data, or it can be allowed to send a proxy that delivers the documents. In some countries embassies can grant visas alone, in others further national authorities are involved in the decision.

### Visa on arrival

Beside the traditional procedures, notably the concept of “visa on arrival” has become a widespread solution model. It does not require any preparation by the traveler, because the visa is applied for and issued at the time of entry. This includes the visa variants that allow entry based on an invitation from a government authority.

### eVisa

The term of “eVisa” (short for “electronic visa”) covers various recent or ongoing approaches for improving visa procedures, for instance:

#### *Electronic visa stickers*

Most efforts for introducing electronic visa stickers are now on hold, because the price for the sticker and its personalization is too high. Moreover, despite invalidation or destruction of expired visas, some active stickers would persist in the passports and would have to be separated during reading. This would slow down the processing.

#### *LDS 2.0*

The ICAO initiative for LDS 2.0 resulted from this issue. LDS 2.0 means that the current standardized Logical Data Structure (LDS) will be extended based on the growing performance of the chips used in passports. Chips have been enhanced in terms of memory, speed, security, and multi-application capability.

New standardized memory structures aim at the following three objectives:

- storage of visa data in electronic form
- storage of Exit & Entry information (eStamp of each border-crossing)
- expansion of the areas for additional biometric data

#### *Visas on the Internet*

Applying for and providing visas on the Internet is common and available in several countries. The electronic visa (eVisa) in this scenario is a confirmation letter which can be printed out or sent via e-mail. The visa holder presents this document to the officer during border-crossing.

## 2 Key Elements



### Data management

A data management server handles the data flows between the entities of the central visa system, including information to or from

- the application system
- the approval system
- the visa database
- the Automated Biometric Identification System (ABIS) database
- the statistics system



### Connection to other systems

The visa server must be connected to related systems such as

- the embassy system for traditional applications
- the eVisa portal for online applications
- the (automated) border control system
- the exit-entry system
- the Interpol “Lost & Stolen Documents” database
- other databases, e.g. wanted list, stop list



### Data protection

Sensitive personal data is managed in the system, therefore the security structure of the system is a very critical component. Measures must be taken to prevent attacks both from outside and from inside. These include, beside IT infrastructure measures:

- encrypted data transmission
- encrypted data storage
- traceable access to information
- ensuring that only known and trusted components are used in the system

## 3 Solution Concept

### Overview

Various eVisa procedures can be combined in a unified and centralized system:

- classic visa applications, with or without a personal visit to an embassy
- visa on arrival (including a self-service station)
- handling of all activities via the Internet

An eVisa issuance solution is useful only if combined with a corresponding inspection solution, where the border control systems are connected to the central visa database.

### Central visa system

The central visa system accepts applications, determines and verifies the applicant's identity, for example using an Automated Biometric Identification System (ABIS). Based on available information, it automatically checks the admissibility of each application.

For decision-making, the central visa system uses not only its own pool of knowledge but also information from external systems. These sources include, for example

- Interpol lists (forged passports, lost documents, wanted persons)
- national wanted and stop lists
- knowledge about previous entries and exits (Entry & Exit System).

If a clear decision is not possible, a manual approval is triggered.

### Connection to border control systems

The central visa system registers all the visas that have been issued. This visa database is connected online to the border control system, thus allowing to check the visas of travelers and their current status during the border-crossing procedure. This is particularly important

- when visas are requested via the Internet (no visa sticker in the passport) or
- when using Automated Border Control gates (if visa is not read separately).

In return, the combination of border control system and visa system allows to capture and add any missing biometric data of the visa holder, for example fingerprints.

## Inspection

The central visa database allows for visa checks at border-crossing points. Verification routines ensure that the traveler's visa information captured at the border-crossing point match the data associated with the visa. For traveler identification, a border police officer will usually compare the traveler's face with the facial image from the passport.

If an Automated Biometric Identification System (ABIS) is involved, biometric features captured at the border-crossing point can be compared with the entire ABIS database. This identification procedure prevents visa fraud and identity fraud.

## Synergies

For the sake of national security and in order to ensure efficient border-crossing, the visa application and visa management processes must be handled via a centralized data management system. Connected to the border management system, it facilitates identification of stop-listed persons.

Besides the border control authorities, other bodies such as law enforcement authorities can be granted access to the system as well. For example, if the entry & exit system is connected to the visa system, an automatic alert can be triggered if (suspicious) individuals overstay their visa.

## Reporting

A running eVisa solution entails vast amounts of information about travelers. To benefit from this collected data, extensive reporting functions have to be provided. These include not only navigation on the data pool, but also regular analyses.

- Searching for persons, applications and issued visas
- Viewing the history of persons, documents and applications

Beside manual search options, the visa database also offers interesting opportunities for fully automated data analysis and reporting functions. Regular analyses constitute the basis for automatically created statistics about

- visa applicants
- issued visas
- usage of visas
- and many other configurable items.

## 4 eVisa Portal

### Apply online

In order to facilitate the visa application and processing, it is recommendable to make applicants fill in their visa application online. Using an eVisa portal, applicants can simply create an account and follow a predefined workflow. From the applicant's point of view, the application procedure must be quick and easy. Intuitive user guidance ensures a convenient user experience.



#### Functional Requirements

- collection of required data
- upload of scanned documents and photos
- supporting different visa types
- supporting different countries of origin
- respecting the visa rules of the issuing country



#### Application Steps

- enter personal data
- upload scans of photo and passport
- submit data
- pay fee online
- wait for approval
- receive visa via e-mail



#### Functional Modules

- data-capturing module
- verification module
- visa response generator
- interface to payment service provider
- interface to central visa system



## Data capture

A data-capturing module collects the necessary information and scanned documents, which are then verified by another module. This verification can by far exceed the checks for completeness, syntactical accuracy and visual quality (e.g. resolution, distortion and sharpness of the photo).

For instance, additional plug-ins allow to check the loaded photos for ICAO conformity and to adjust them if necessary. They can analyze the scan of the passport holder page and detect

- whether the page is a potential fake
- whether the document matches with the enrolled textual data
- whether the photo on the holder page matches with the uploaded photo

## Payment

A Payment Service Provider (PSP) is usually involved in order to make online payment as safe as possible and to adapt to the respective preferences and rules applicable within a country. This enables travelers to pay by means of various credit, debit and bank cards or via mobile phone.

If no payment is necessary, the portal must verify that the application is from a real person. This can be achieved by integrating a “Captcha” function, where the user must recognize distorted letters and numbers in an image and type them into a provided field. This ability proves that the user is a human and not a machine (often called “bot”, which is short for “robot”).

## Issuance

As a result, the portal will automatically notify the applicant via e-mail. It can either send the official visa document as an attachment or inform the applicant that the document is available for download in the eVisa portal.

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*Mühlbauer Group offers comprehensive consulting regarding eVisa and provides customized solutions. Please contact our Sales Manager for your region or our nearest branch office.  
We look forward to your inquiry.*

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