net**U**

Border Management

The NetU Solution for Efficient Border Control

Public Sector Solutions

Law Enforcement

Contents

THE BORDER MANAGEMENT INFORMATION SYSTEM

NetU's Border Management Information System (BMIS) is a complete solution that automates border control procedures and allows officers to perform their duties effectively, while ensuring the secure assessment of travelers, the compliance with national and European legislation and the alignment with industry best practices.

BMIS is based on a modern architecture, leveraging established technologies and development frameworks to deliver a robust and dependable system. It is a highly flexible solution, proven several times over its existence, adapting to numerous border control needs rapidly and cost-effectively.

BMIS employs high availability features to provide resiliency and is designed to be fail-safe, operating both as an on-line and off-line system. In the event of data link outage, Border Control points can carry on operations and resume synchronization with the back-end on-line system upon its restoration.

In order to enable its full involvement in the law enforcement and border control ecosystems, the BMIS supports open standards and integration best practices, including web services and messaging queues to provide practical interfacing capabilities with third-party systems. Moreover, the user interface is designed and updated with continuous feedback from Border Control officers, in order to accurately reflect the associated processes and provide a productive interaction channel both on the border control workstations as well as on tablet-based mobile devices in the field, connected through secure mobile data networks.

BMIS consists of a number of functional modules, including the following:

- Arrival & Departure Check Module

- National Stop List Module

- Immigration Module

All of the above modules are described in the following sections of this white paper, aiming to provide a high-level overview of the functional components of the BMIS.

ARRIVAL & DEPARTURE CHECK

The Arrival & Departure Check functionality allows Border Control officers to perform all the required inspections during the arrival or departure of travelers in order to determine their right of legal entry into the country.

In order to relieve the officers from the complexity of the multiple passenger profiles, the BMIS allows the execution of dynamic checks depending on the nationality of the traveler. The BMIS is in compliance with the Schengen Borders Code, although it can be dynamically configured to adapt to periods of emergency requiring more thorough border control checks.

The Arrival & Departure Check module supports multiple types of travel document readers, including Machine Readable Zone (MRZ) swipe readers, biometric scanner readers as well as mobile devices for document verification. Integration with these devices can be implemented at the lowest level, using the manufacturer's software development kit (SDK). This way, data collected through these devices is used to automatically populate the corresponding fields in the Arrival & Departure Check module of the BMIS, ensuring the fast and accurate capture of information. Moreover, the BMIS can also support manual entry of information for non-machine readable travel documents.

Following the collection of information from the travel document, the Arrival & Departure Check module executes parallel checks using both the personal and travel document data. Based on a modular and open architecture, the system allows checks to be performed on a variety of areas of interest and integrate with multiple data sources, including, but not limited to:

- Document Authenticity
- National Stop List
- Schengen Information System II (SIS-II)
- Visa Information System (VIS)
- Advance Passenger Information (API)
- Passenger Name Records (PNR)
- INTERPOL Databases (FIND)

In addition to the travel document verification checks, the Arrival & Departure Check module can be used to record the reason for travel of individuals, such as for business, for leisure or for studying. In combination with the Immigration module, this functionality can be used to identify aliens that have exceeded their permitted length of stay and are considered over-stayers.

Following the execution of relevant checks, the first-line Border Control officer can allow the individual to pass through the border control point, refer the individual to a secondary inspection point or refuse the entry or exit of the individual. The BMIS can also be integrated with Automatic Border Control (ABC) gates to perform the above checks and facilitate a large number of travelers.

Moreover, the Arrival & Departure Check module includes full functionality for managing all captured arrival and departure records from authorized users, such as the Border Control agency or the Immigration Enforcement authorities.

Document Authenticity Check

The Document Authenticity Check functionality allows the Arrival & Departure Check module to verify the authenticity of the presented travel document through a number of validation checks, including:

Document Security Features

The BMIS integrates with biometric passport readers in order to quickly and efficiently validate the security features of a presented travel document against an up-to-date database of known international travel documents. The results of the Document Security Features Check are

displayed on the Border Control officer's dashboard.

Text Comparison

The BMIS can receive multiple source inspection results from the biometric passport readers, including text scanned from the travel document, text obtained from the Machine Readable Zone (MRZ) of the document and text pulled from the RFID chip of biometric travel documents. It then proceeds to perform textual comparison between scanned OCR characters, MRZ text and text retrieved from the RFID chip. The results of the Text Comparison Check are displayed on the Border Control officer's dashboard.

Visual Comparison

The BMIS receives the available images from the presented travel document and displays them on the Border Control officer's dashboard in order to perform a visual comparison, for example between the scanned photograph from the passport page and the JPEG image retrieved from the RFID chip.

Schengen Information System II (SIS-II)

The BMIS is tightly integrated with the SIS-II entity model, allowing the direct and efficient adoption of the SIS-II functionality into the National Border Management System, allowing Border Control agencies to smoothly transition to a higher level of security, as required by the Schengen area.

Alerts stored in SIS-II can be accessed for the purposes of border control in accordance with the Schengen Borders Code. Thus, integration with SIS-II enables Border Control officers and visa issuing and migration authorities to enter and consult alerts on third-country nationals for the purpose of refusing their entry into or stay in the Schengen Area.

The BMIS integration with SIS-II is to be further expanded in order to cover biometric identification using fingerprints searched against the Automatic Fingerprint Identification System (AFIS), once available within the context of SIS-II.

Relevant EU Legislation: Regulation (EC) No 1987/2006 of the European Parliament and of the Council of 20 December 2006 on the establishment, operation and use of the second generation Schengen Information System (SIS II).

Relevant EU Legislation: Regulation (EC) No 562/2006 of the European Parliament and the Council of 15 March 2006 establishing a Community Code on the rules governing the movement of persons across borders.

Visa Information System (VIS)

The Visa Information System (VIS) functionality included in the BMIS enables Border Control agencies to facilitate checks at external border crossing points, in order to verify the identity of the individual, the authenticity of the visa as well as whether the requirements for entering, staying in or residing within the national territories are met.

The BMIS includes embedded functionality that integrates with VIS in order to validate Schengen-area visas that are presented to Border Control points. In the same way that the Document Authenticity Checks operate, the BMIS can use the biometric document reader functionality to compare information on the presented visa page against the issued and valid visas that exist in the VIS databases.

Moreover, the BMIS is capable of leveraging fingerprint readers that capture the required fingerprints at the Border Control point, and can then interact with VIS through standards-based web services in order to perform fingerprint matching and verification for the visa holder.

Relevant EU Legislation: Regulation (EC) No 767/2008 of the European Parliament and of the Council of 9 July 2008 concerning the Visa Information System (VIS) and the exchange of data between Member States on short-stay visas (VIS Regulation)

Advance Passenger Information (API)

The BMIS includes the necessary business logic to simplify integration with Advance Passenger Information (API) data provided electronically to the Border Control agencies by the carriers. API data is supplied, at the request of the authorities responsible for carrying out checks on persons at the borders, in order to improve border control and to combat illegal immigration more effectively.

Moreover, the BMIS can pre-screen passengers by leveraging the available data and the inspection functionality utilized by the Arrival & Departure Check module, in order to shorten the time required for checking each traveler at the border control point and facilitating the entry of passengers

Relevant EU Legislation: Council Directive 2004/82/EC of 29 April 2004 on the obligation of carriers to communicate passenger data.

Passenger Name Records (PNR)

The BMIS can be considered a cornerstone of the National Passenger Information Unit, which is required by the provisions of the European PNR Directive. Due to its natural capacity of performing parallel inspections on multiple data sources, the BMIS can handle the pre-screening and profiling of passengers and assist with risk-based targeting for the prevention of terrorism and criminal offences.

Relevant EU Legislation: Directive (EU) 2016/681 of the European Parliament and of the Council of 27 April 2016 on the use of passenger name record (PNR) data for the prevention, detection, investigation and prosecution of terrorist offences and serious crime

INTERPOL Databases (FIND)

The BMIS can be effortlessly integrated with a variety of INTERPOL's databases through the I-24/7 network and the FIND system, including the Notices and Nominal Database (NOM), the Stolen and Lost Travel Documents (SLTD) and Travel Documents Associated with Notices (TDAWN):

Notices and Nominal Data

INTERPOL's system of Notices is used to issue international alerts for fugitives, suspected criminals, persons linked to or of interest in an ongoing criminal investigation, persons and entities subject to UN Security Council Sanctions, potential threats, missing persons and dead bodies. Details are stored in a database known as the INTERPOL Criminal Information System, which also contains personal data and the criminal history of people subject to request for international police cooperation.

Travel Documents

The Stolen and Lost Travel Documents (SLTD) database is one of the largest INTERPOL databases and it is

considered among the world's primary tools for detecting stolen and lost travel documents in order to prevent illicit international travel and false personation by criminals and terrorists. Specifically, SLTD is a searchable repository of non-personal information drawn from passports, visas, and identity documents that have been reported stolen or lost by issuing authorities of INTERPOL member countries. It also includes information about stolen passport blanks and travel documents that have been revoked by an issuing national authority. At the same time, the Travel Documents Associated with Notices (TDAWN) database allows officers at border control points to check passport data against INTERPOL's notices, to see if the holder is the subject of a notice.

Relevant EU Legislation: Common Position 2005/69/JHA

NATIONAL STOP LIST

The BMIS includes a fully featured module for the management and supervision of a National Stop List. The National Stop List functionality enables law enforcement agencies and other competent authorities, such as the Ministry of Foreign Affairs, to issue messages forbidding the entry or exit of certain individuals from the country.

The Stop List messages can be entered through a secure web-based user interface and can refer to a number of dynamically configured sources, such as:

- Outstanding Arrest Warrants
- Court Orders
- Immigration Offences

- Drug-related Offences
- Stolen & Lost Travel Documents
- Global Terrorism
- International Police Cooperation Alert Lists (e.g. INTERPOL, EUROPOL)

Further to the personal identification data, each Stop List message includes the following information:

- The competent authority issuing the message;
- The reason for issuing the message;
- The required actions upon identification of the person;
- The particular identification characteristics of the person (e.g. known aliases, travel documents, birth dates, appearance marks, etc.)

The National Stop List can be used both at the arrival and the departure of travelers, during the border control checks, in order to ascertain that the individual is not included in any of the aforementioned Stop List sources. When the individual is not matched with a Stop List message, the entry or exit is allowed accordingly. However, in the event the individual is matched with a Stop List message, the required action is initiated as per the instructions included in the issued message.

IMMIGRATION

The Immigration module included in the BMIS enables the automated production of statistical reports regarding the management and control of external borders. These reports are an important requirement by the European

Union, allowing the monitoring of the implementation of various EU decisions concerning immigration, asylum and visa policies.

In order to ensure the timely preparation of the required reports and statistical information, the Immigration module allows the effective capturing of data from a variety of areas, including illegal migration, arrests and deportations of irregular migrants, refusal of entry to aliens, as well as identified over-stayers, asylum seekers, refugees, etc.

The Immigration module allows a Border Control agency to efficiently capture, monitor and report information relevant to any type of immigration movements, handling the full spectrum of the necessary administrative procedures.

SMART BORDERS & THE FUTURE

The modular and open architecture of the BMIS allows the painless introduction of new functionality and enable trouble-free integration with third-party systems. Operating without interruption for more than a decade, the BMIS has proven itself as a reliable and robust information technology system, adapting to each and every national and European requirement. The latest functionality planned to be integrated into the BMIS is the pan-European Entry/Exit System (EES), part of the Smart Borders package which includes also the Registered Traveler Program (RTP) and the EU Travel Information and Authorization System (ETIAS).

In April 2016 the European Commission adopted a revised

legislative proposal for Smart Borders, which includes a Regulation for the establishment of an Entry/Exit System and a proposed amendment to the Schengen Borders Code to integrate the technical changes needed for the Entry/Exit System. Following the legislative process and finalization of the relevant technical specifications from the European Agency for the operational management of large-scale IT systems in the area of freedom, security and justice (eu-LISA), the BMIS shall be ready for the operational go-live date of EES in 2020.

In conclusion, the BMIS helps border control agencies successfully negotiate the continuously increasing traveler flows and enable the facilitation of passengers with high capacity and high performance automated tools, including Automatic Border Control (ABC) gates, passenger screening and profiling using API and PNR data, as well as the traditional first line checks with a variety of performed inspections.

Provisional EU Legislation: 2016/0106 (COD) Proposal for a Regulation of the European Parliament and of the Council establishing an Entry/ Exit System (EES) to register entry and exit data and refusal of entry data of third country nationals crossing the external borders of the Member States of the European Union and determining the conditions for access to the EES for law enforcement purposes and amending Regulation (EC) No 767/2008 and Regulation (EU) No 1077/2011

About NetU

NetU is a leading Information Technology solutions and services organization in the Eastern Mediterranean.

With presence in Cyprus, Greece and Serbia, NetU is recognized as a major Integrator in the region and has developed strong local and international activity.

NetU is specialized in Public Sector, offering solutions that cover the full spectrum of a public organization. Our extensive expertise in software, hardware and network technologies, combined with proven experience in project management and our in-depth knowledge of selected industries, make us able to provide complete solutions.

Our Experience

Selected solutions in the Public Sector include:

· Cyprus Police Computerization System

· Schengen II Information System for Cyprus, Greece and Croatia

· Financial Information & Management System for the Treasury Department of the Republic of Cyprus

· Social Insurance System and Public Employment Service Computerization for the Ministry of Labour and Social Insurance of the Government of Cyprus

· Asylum Service System, Integrated Town Planning System and the Department of Lands & Surveys Portal for the Ministry of Interior of the Government of Cyprus

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