

ANALYSIS OF FALSE DOCUMENTS DETECTED AT THE BORDER CONTROL OF EUROPEAN UNION MEMBER STATES AND THE PROSPECTIVE METHODS FOR THE DETECTION OF COUNTERFEITS

Galina Jupatova¹, Iluta Arbidāne², Iveta Mietule³

¹Senior Inspector of the State Border Guard Examination Service, the State Border Guard, e-mail: Galina.Jupatova@rs.gov.lv, Latvia

²Dr.oec., Professor, Rezekne Academy of Tehnologies, e-mail: Iluta.Arbidane@rta.lv, Rēzekne, Latvia

³Dr.oec., Professor, Rezekne Academy of Tehnologies, Rezekne, Latvia, e-mail: Iveta.Mietule@rta.lv, Rēzekne, Latvia

Abstract. *The subject of the paper "Analysis of False Documents Detected at the Border Control of European Union Member States and the Prospective Methods for the Detection of Counterfeits" is topical, as the verification of the authenticity of travel documents is the cornerstone of border controls; also, the interrelations between the techniques of producing false documents discovered in the EU Member States and the practical application of technologically new methods of document reproduction has not been extensively reviewed and evaluated in EU scientific literature and current information materials. Identity fraud is expensive: from bank accounts opened with false names to money laundering and all kinds of smuggling and terrorism. The endless variety of criminal activities gives false documents a high value. In addition, for 3 billion travelers worldwide, identity verification needs to be fast, unproblematic and effective. Due to the pressure on borders (time constraints and an increasing numbers of travelers) and the increasing complexity of modern document security, border control capabilities (officials and/or automated systems) are compelled to decide quickly and simply whether documents submitted are authentic or false. The operational execution of document verification capacity is crucial for the efficiency and security of border checks. The aim of the research is to study the quality of false documents discovered at European Union Member States' border inspections and to identify prospective methods of their detection.*

Keywords: *external borders of the EU member states, false documents, FRONTEX, innovative technologies, prospective detection techniques.*

Introduction

Every year around 700 million people cross the European Union external border. Consequently, one of the main tasks of border checks is to detect illegal activities without deterring other travellers. There are no permanent border controls between the Schengen countries, so the control of external borders is even more important.

The problem of falsification of travel documents is receiving increasing attention in the context of recent terrorist attacks in Europe and current migratory flows. Document fraud has become a driver of terrorism and



organized crime and is linked to human trafficking and smuggling of migrants. In this context, it is essential to strengthen the security of travel documents, including the underlying identity management infrastructure (Eiropas Komisija, 2016).

The most important external factors affecting the authentication of documents required for border crossing are the production and sale of high-quality fake documents under the supervision of organized crime. Use of technological production methods identical to producing authentic documents, high-quality imitation of security measures of documents, as well as the use of stolen and fraudulently obtained blanks of authentic documents, high-quality document counterfeits are produced, which contributes to the increase of illegal immigration. At the same time, the low quality of documents issued for domestic use in many high-risk countries, violations of personalization and issuance procedures by the issuing authorities, as well as the widespread possibility of obtaining authentic identification documents fraudulently have a significant impact on verification of a person's identity.

The verification of a person's identity in the framework of border control, immigration control and asylum procedures cases is positively impacted by the increasingly used verification of biometric identifiers of persons (comparative analysis of facial parameters, fingerprints), as well as automated inspection of documents, incl. electronic travel documents, visual and electronic components (VRS stratēģija, 2017).

Hypothesis of the research - the tendencies, volume and quality of false documents detected at the state border of the Republic of Latvia are interrelated with the indicators of other EU member states in this field, which substantiates the need to introduce uniform methods for detecting false documents throughout the EU border control area.

The aim of the paper is to study the peculiarities of false documents detected at the border control of the European Union member states, to evaluate the technologies and methods used for their falsification and to define the perspective methods of detection of false documents.

In the course of the research the authors have used the following **research methods**: empirical research, qualitative research method (document analysis, case analysis), monographic method of research of theoretical and empirical sources, research of legislative documents, logical analysis method, synthesis method, information statistical analysis method.

Novelty of the research – the coherence of the methods of production of false documents discovered in the EU member states and the practical application of technologically new methods in document fraud have not been widely discussed and evaluated in the EU scientific literature and current informative materials. Both quantitative and qualitative analysis of

false documents detected at the EU external borders reflect the latest trends in document reproduction technologies, describes ability of the EU Member States to detect high-quality false documents and justifies the necessity of perspective improvements to document authentication processes.

The growing problem of falsification of travel documents has been highlighted in the context of the recent terrorist attacks in Europe and current migratory flows. Document fraud has become a driver of terrorism and organized crime and is linked to human trafficking and smuggling of migrants. Combating document fraud is one of the priorities of various international, regional and national organizations.

Research results and discussion

The border guard often has very limited time resources to assess the authenticity of the document presented. It takes skill and experience to spot a false visa stamp or residence permit. It is important to remember that false documents are an integral part of various offenses.

Effective and timely exchange of information between the relevant authorities is a precondition for a successful fight against terrorism. The work of the European Border and Coast Guard Agency (FRONTEX) is therefore very important for the security of the Member States. A high-quality and real security union means close cooperation between the Member States on security issues, recognizing that the internal security of one Member State is the internal security of all Member States and of the European Union as a whole (Eiropas Komisija, 2018).

Effective detection of false documents requires a detailed analysis of the falsification methods used, the organization of the activities, the methods of using false documents, as well as a high level technical equipment, information systems and skilled staff who can draw attention to the right aspects based on the risk analysis, and functioning national and international cooperation. The exchange of information on false travel documents makes it possible to curb the falsification of documents and is therefore an effective contribution to combating crime and smuggling of persons across the borders.

In order to exchange electronically the information on authentic and false documents held by the EU Member States and partner countries as soon as possible, the False and Authentic Document Online system (hereinafter – FADO) (Ministru Kabineta instrukcija, 2009) was established in accordance with the EU Council Joint Action of 3 December 1998 (98/700 /TI). Such a single and common information system is a very useful tool in the fight against falsification of documents, as it facilitates the

detection of such documents. The main feature of the FADO system is the possibility for the EU Member States to upload online information on detected falsified documents or to add alerts on falsified documents. Following certain quality management procedures, all information contained in the FADO is available to each EU Member State and is structured and illustrated. FADO information provides an opportunity to qualitatively check the authenticity of a document (based on descriptions of specimen documents); to inform all EU Member States in real time about current detected falsifications; to analyse trends in the use of false documents, methods of falsification and, on the basis of this information, to assess the readiness to detect similar fraud.

EU agencies are closely involved in the fight against document fraud. FRONTEX provides the Member States with document expert teams and tools for inspections that are carried out when migrants arrive at the hotspots, as well as provides training and risk analysis. The work of the European Counter-Terrorism Centre at Europol focuses on the link between false documents and terrorism, while document security is an important issue for Europol's European Migrant Smuggling Centre. In addition to the current tools used for border management and the successful exchange of information on the use of false documents, there is an Interpol SDLT (Stolen and Lost Travel Document) database and an Advance Passenger Information (API) system that collects passenger information before flights to the EU. These tools are important for both EU citizens and third-country nationals.

One of the means of exchanging information is the activities of liaison officers. It aims to strengthen controls at the EU external borders and to develop effective management of migration flows in line with Schengen requirements. State Border Guard Liaison Officers in Belarus, Georgia and Russia have facilitated cross-border co-operation and the expansion of professional contacts between law enforcement agencies of the EU Member States and third countries, thus reducing illegal cross-border activities and combating illegal immigration to the EU Member States.

In order to provide a broader overview on the situation with false documents detected at the external borders of the EU Member States, the authors have reviewed data for the period from 2015 to 2018. The analysis of false documents within that period shows that the number of the cases of use of false documents has been permanently high year after year: the EU Member States have reported 8361 person who presented false documents when entering the EU/EEA from the third countries in 2015, 6998 persons in 2016, 6670 in 2017, and 6667 persons in 2018.

At present, the passports most frequently fraudulently used at the EU's external borders are authentic Moroccan passports in the hands of Syrian

citizens, as are Swedish, French, British and Spanish passports. More than 80% of fraudulently used documents are issued in the EU Member States. Offenders are more likely to try to obtain authentic documents than to rely on costly counterfeits, using corruption in the administrative authorities in order to obtain blanks of authentic documents.

Table 1. Detection of persons using false documents on entry at the external borders by Member State, border type and top ten nationalities (Frontex, 2019)

	2015	2016	2017	2018	Share of total	% change on prev. year	Highest share
Country of issuance							Type of Document
Spain	973	839	997	1 115	14	12	ID Cards (41 %)
France	906	779	1 030	953	12	-7.5	Passports (51 %)
Italy	929	864	854	734	9.1	-14	ID Cards (35 %)
Germany	476	467	499	419	5.2	-16	Visas (39 %)
Poland	1 011	883	736	405	5	-45	Visas (79 %)
Greece	472	277	278	293	3.6	5.4	ID Cards (26 %)
Turkey	138	67	118	279	3.4	136	Passports (83 %)
Belgium	476	288	247	242	3	-2	Residence Permits (45 %)
Netherlands	128	84	105	163	2	55	Visas (43 %)
Lithuania	96	426	279	163	2	-42	Visas (79 %)
All Other	4 071	3 247	3 024	3 340	41	10	Passports (65 %)
Type of Document							Type of Fraud
Passports	4 063	2 755	2 879	3 177	39	10	Auth-Impositor (31 %)
ID Cards	1 203	1 147	1 306	1 516	19	16	False-Counterfeit (40 %)
Visa	1 934	2 115	1 829	1 458	18	-20	Auth-Fraud Obt (38 %)
Residence Permits	1 381	1 166	1 228	1 142	14	-7	False-Counterfeit (45 %)
Stamps	903	833	706	605	7.5	-14	False-Counterfeit (81 %)
Other	192	205	219	201	2.6	-8.2	False-Counterfeit (55 %)
Total	9 676	8 221	8 167	8 099	100	-0.8	

As the Republic of Latvia is one of the EU member states, the authors of the paper have also reflected the contribution of the Latvian border guards at the external borders of the EU member states in the field of detected false documents. With the increasing number of migrants, the number of false documents used at the Latvian state border has increased proportionally. The "Northern Route" of illegal immigration through the Russian Federation to Finland and Norway and its branch through the border of the Russian Federation and the Republic of Latvia and the border of the Russian Federation and the Republic of Estonia is still considered a significant threat.

The transit of illegal immigration of certain groups of illegal immigrants, such as Vietnamese nationals through the Russian Federation to the Republic of Latvia and further to Poland, the Czech Republic, Germany is affected by the former economic ties and large diasporas in the target countries, as well as strengthening of legislation governing immigration in the Russian Federation setting stricter requirements for obtaining a residence and work permit. This has forced many long-term

economic migrants that has lived in the Russian Federation to seek new income opportunities in the EU Member States.

The predominant false documents at the borders of the Republic of Latvia are Italian documents (mostly Schengen visas and ID cards), Lithuanian documents (Schengen visas, vehicle documents, driving licenses), French documents (Schengen visas, residence permits, ID cards).

In May 2019 at the conference "Security Identification 2019" in Riga, the FRONTEX Agency's Centre of Excellence for Combatting Document Fraud (CED) announced the most current trends in the falsification and misuse of documents at the borders and within the EU Member States:

- complexity of document falsification techniques (fully/partially falsified documents – mechanically and chemically washed visas, overprinting, production of laser engraved documents);
- new techniques are being developed to misuse biometrics (*Morphing*);
- increased misuse of authentic documents (identity theft – impostors);
- fraudulent use of identity documents to obtain authentic travel documents (authentic documents are issued by an official authority on the basis of a false birth or marriage certificate);
- very high demand for EU travel documents among falsifiers. (Frontex, 2018)

With the increasing level of protection of travel documents and the use of the latest automated document verification equipment, illegal immigrants choose to travel as impostors and use other persons' identities more often than before. The introduction of more sophisticated security features, systems for verification of document production methods and document checks make it more difficult to falsify identity and travel documents. However, in response, falsifiers are increasingly turning from traditional forgeries involving physical documents (such as changing the validity of a passport or reproducing a completely authentic document) to other forms of document fraud, such as the use of authentic documents by impostors. Impostor is a person who pretends to be somebody else and misuses authentic documents. Among travel documents, the passport is the predominant type of document used by impostors. Identification of a person by photographs when checking the travel documents of persons crossing the state border is an integral part of border control, which is one of the most important components of the examination of identity documents and aims to prevent a person from entering and leaving the country with misused authentic documents. Each time the examiner takes the handed over identity document, he must make a quick and reasoned decision: whether the document is authentic, whether the photograph corresponds to the person presenting the document. The current problem

of impostors at the external borders of the EU is evidenced by the statistical indicators of FRONTEX: in 2018, 6483 cases of misuse of authentic documents by impostors were detected, thus number of the cases had increased by 23% in comparison with 2017 (Souchet, 2019). In Latvia, 7 cases (in 2017 – 8) of misuse of authentic documents by impostors were detected in 2018; these were citizens of Nigeria, Russia, Lithuania, Tajikistan, and Latvia.

According to statistics, authentic French (60.4%), British (45.6%), Spanish (56.6%), Swedish (76.8%) and Dutch (73.9%) passports are the most commonly used.

New techniques are being developed to misuse biometrics: morphed images, misuse of certificates to obtain authentic travel documents based on a false civil status document, issuing authentic documents by the official authorities. These are the most current trends at the external borders of the EU Member States. There is no a 100% detection solution for all types of fraudulent documents. For example, morphing attacks in the context of border control are a relatively new and undocumented phenomenon. Image morphing is a processing technique used to calculate the transformation from one image to another, which can be achieved by processing images of face, iris, or fingerprints. In an attempt to obtain an authentic travel document, illegal applicants submit a morphed image to the issuing authority when initiating the registration procedure. This is called Morphing Attack Detection. If fraud is successful, several people have the opportunity to cross the border, providing wanted criminals with the opportunity to use an authentic passport to enter a country with a false identity (Hor, 2017).

Falsification of biometric passports and morphed images is a challenge for both research institutions and law enforcement authorities of the Schengen member states. The use of biometric technologies, which offer new possibilities for border management, will facilitate the crossing of borders by *bona fide* travellers, while making the border more secure. In particular, it is acknowledged that the large-scale integration of such technologies into the border control infrastructure also poses new challenges for the border security: biometric systems can be hacked to make it difficult to identify fraudulent travellers during border checks. This means that the introduction of new technologies that support biometric identification also requires countermeasures that can prevent such attacks (i.e., detect and prevent fraudulent use of biometric technologies). One option to address this issue may be to suggest that a high-resolution facial image be retained in the document chip, which could be used to analyse the facial image in case of suspected morphing (Sticere, 2019). This will require the use of new standard chips in travel documents. One of the priorities

mentioned in the State Border Guard Operational Strategy for 2017–2019 is to increase the efficiency of border checks by using modern technical solutions for border checks based on the processing of biometric data.

Analysing the information included in iFADO from the alerts of the EU member states on detected false documents, it was found that out of the total number of alerts in 2019 (2450), there were 142 alerts (5.7% of the total number) on visa fraud. Among descriptions of fake visas, a clear tendency can be noted – use of authentic visa blanks, where the original information is changed in the visa by etching (washing off) it and entering other information instead. Compared to the trends of the previous years, these forgeries are of very good quality. It is not insignificant that offenders use a printer corresponding to the specimen when inserting new data.

Due to the constantly evolving printing technology and the very high resolution of the image produced on it, forged documents are also of high quality. This is particularly the case for very high quality images of false border stamps, which are made up of fine details and images that make it difficult to see the features of how the stamp image is made. To increase the effective ability to detect false documents, the glass magnification (10x) that is currently used in Line I is insufficient. The authors of the paper consider that the minimum requirements for Line I border inspection equipment should be changed, setting a mandatory requirement to use magnifiers with a magnification of at least 15x. Based on the research of the features of document forgery, it can be stated that the use of such more powerful technical tools in the initial inspection of border control documents would be necessary not only for the State Border Guard officials, but for all border guards of the EU Member States. In order to align the recommendations of the EU border guidance regulations with current practical trends and to strengthen perspective techniques for detecting false documents, it is necessary to amend the recommendations of the general requirements of the Borders section of the Schengen Catalogue. At the same time, the improvement of the above-mentioned technical equipment in the structural units of the State Border Guard must be implemented.

An analysis of false documents detected in the EU Member States, their quantitative and qualitative indicators, new features of falsification technologies and methodology of false document detection, leads to conclusion that in addition to the long-standing traditional falsification techniques, innovative falsification techniques have been identified at the EU external borders in recent years (re-printing of initial data, use of very high quality printing equipment, application of gentle mechanical and chemical effects on the document, chip cloning, morphing a person's facial image). Researching and comparing the trends and volume of false documents in the EU and the Republic of Latvia, the authors have found

how the trends, volume and quality of false documents at the border of the Republic of Latvia are related to other EU Member States in this area, which justifies the need to introduce a uniform perspective tools for fraud detection throughout the EU border control area.

The most important precondition for successful detection of false documents is technical equipment and information systems. In order to detect the features of technologically high-quality forged documents in the Line I border control, technical equipment with higher technical parameters is required (image magnification level, application of additional lighting, and automated document authentication check). Qualitative verification of electronic documents requires mandatory verification of all electronic security mechanisms of the document (BAC, PACE, AA, PA, EAC). Successful detection of impostors and morphed facial images of a person requires a comparison of the person's biometric data with the fingerprint embedded in the chip.

Conclusions and suggestions

The authors **conclude:**

After a comprehensive analysis of the false documents detected in the EU Member States, their quantitative and qualitative indicators, new features of falsification technologies and the methodology of detection of falsification, the authors have come to the following conclusions:

1. The tendencies, volume and quality of false documents detected at the state border of the Republic of Latvia are interrelated with the indicators of other EU Member States in this field, which substantiates the need to introduce uniform prospective methods of detecting false documents throughout the EU border control area.
2. Alongside long-standing traditional document falsification techniques, innovative forms of document falsification have been identified at the EU external borders in recent years (reprinting of original data, using very high quality office equipment for printing, applying gentle mechanical and chemical effects on document, chip cloning, facial image morphing).
3. Among traveling documents, the passports are predominant type of documents used by impostors. At the moment, the passports predominantly misused at the EU external borders are authentic Moroccan passports in the hands of Syrian citizens, as well as Swedish, French, British, and Spanish passports. More than 80% of misused documents are issued in the EU Member States. Offenders are more likely to try to obtain authentic documents using corruption in the

administrative authorities to obtain blanks of authentic documents than to rely on costly counterfeits.

4. Electronic authentication of travel documents of third-country nationals is an essential component of the future entry/exit system; it contributes to security by helping to detect and prevent identity theft and misuse of travel documents. In addition, this system will prevent identity fraud by managing the biometric identity of third-country nationals.
5. In order to detect the features of technologically reproduced false documents at the Line I of border inspection, technical equipment with higher technical parameters (image magnification level, application of additional lighting, and automated document authentication) is required.
6. Qualitative verification of authenticity of electronic documents requires mandatory verification of all electronic security mechanisms of the document (BAC, PACE, AA, PA, EAC).
7. Successful detection of impostors and morphed facial images of a person requires a comparison of the person's biometric data with the fingerprint embedded in the chip.

In order to improve the methods for detecting document fraud used by the border guard services of the EU Member States in accordance with the findings of the study, the authors propose to establish a working group of the European Commission, which will be able to initiate and make the following amendments to the Schengen catalogue:

1. Initiate an amendment to Chapter 2, Paragraph 3, Point 44 of the Schengen Catalogue, including the following additional requirements for the technical equipment of Line I border checks:
 - document inspection equipment with infrared lighting;
 - magnifier with at least 15x magnification;
 - document reader with electronic document security mechanism (BAC, PACE, EAC, AA, PA) verification capabilities.
2. Initiate an amendment to Chapter 2, Paragraph 3, Point 46 of the Schengen Catalogue, including additional requirements for the following technical equipment of the Line II border checks:
 - a stereomicroscope with a magnification of at least 60x;
 - document reader with electronic document security mechanism (BAC, PACE, EAC, AA, PA) verification capabilities.
3. The State Border Guard shall ensure the following improvements to the document examination system:
 - to update the technical equipment of document inspection at all border crossing points, providing border inspection Line I with magnifying

- glasses with a magnification of at least 15x and border inspection Line II with microscopes with a magnification of at least 60x;
- to introduce the most up-to-date and secure chip access mechanism in the process of reading electronic documents at border checks – Password Authenticated Connection Establishment (PACE);
 - to ensure the interoperability of REIS with the repository of document authentication certificates, and in the process of document authentication mandatory to perform passive authentication (PA) verification of the electronic document chip;
 - for successful and reliable person's identification, to organize the interoperability of REIS with the document certificate repository and to ensure the introduction of the extended data access mechanism (EAC), which will allow comparing the fingerprints on the chip with the fingerprints of the document holder.

References

1. Eiropas Komisijas paziņojums Eiropas parlamentam un padomei (2016). Rīcības plāns stingrākai Eiropas darbībai pret ceļošanas dokumentu viltošanu. *Publications Office of the EU*. Retrieved October 5, 2020, from <https://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2016:0790:FIN:LV:PDF>
2. Eiropas Parlamenta un Padomes Regula par Eiropas Robežu un krasta apsardzi un ar ko atceļ Padomes Vienoto rīcību Nr. 98/700/JHA, Eiropas Parlamenta un Padomes Regulu (ES) Nr. 1052/2013 un Eiropas Parlamenta un Padomes Regulu (ES) 2016/1624 (2018). *Eiropas Komisijas ieguldījums vadītāju sanāksmē Zalcburgā, 2018.gada 19.-20.septembrī*. Retrieved October 5, 2020, from <https://ec.europa.eu/transparency/regdoc/rep/1/2018/LV/COM-2018-631-F1-LV-MAIN-PART-1.PDF>
3. Hor, T. (2017) Developing harmonized automated border control (ABC) training capabilities. *ICAO TRIP Magazine*, 2 (12). Retrieved October 5, 2020, from https://www.icao.int/publications/journalsreports/2017/TRIP_Vol12_No2.pdf
4. Ministru kabineta instrukcija Nr.12 (2009). Viltoto un autentisko dokumentu (False and Authentic Documents) informācijas sistēmas veidošanas, aktualizēšanas un izmantošanas kārtība. *Latvijas Republikas tiesību akti*. Retrieved October 5, 2020, from <https://likumi.lv/doc.php?id=195371>.
5. Risk Analysis for 2019 (2019). Warsaw: Frontex. Retrieved October 5, 2020, from https://frontex.europa.eu/assets/Publications/Risk_Analysis/Risk_Analysis/Risk_Analysis_for_2019.pdf
6. SOUCHET, J. (2019). New Trends about Document Fraud at European level. *Proceedings of ICBWG Seminar and Meeting Windhoek*. FRONTEx Centre of Excellence for Combating Document Fraud. Short URL: <https://rb.gy/dfogoo>
7. STICERE, I. (2019). Par dalību FRONTEx aģentūras organizētajā starptautiskajā konferencē par robežu biometriju: morfešana un tā uzbrukumu noteikšanas metodes. *Latvijas Republikas valsts robežsardzes dienesta ziņojums*. Polijā, Varšavā.
8. Valsts robežsardzes darbības stratēģija. 2017. – 2019.gadam (2017). Retrieved October 5, 2020, from https://www.rs.gov.lv/faili/doc2013/vrs_strategija_2017.-2019.g..pdf