

Information Support for Combating Criminal Offences by the State Border Guard Service of Ukraine

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Abstract

The article deals with the research of information support for combating criminal offences of the State Border Guard Service of Ukraine taking into account the criminological aspect. This area of information support is directly related to the development of the modern information digital society. The State Border Guard Service of Ukraine (SBGSU) uses modern methods and technologies of criminology to combat criminal offences. The need to improve the organisational and legal instruments (methods) of information support and continuous improvement of information technologies in the field of combating criminal offences determine the relevance of the research topic raised in the article. The purpose of the article is to study, identify the peculiarities and prospects of using information support for combating criminal offences by the SBGSU in the criminological aspect. The methodological basis of the research was formed by a combination of general scientific, sectoral and special scientific methods, which enabled to achieve the research objective when applied in a comprehensive manner. The dialectical method made it possible to consider information support as a complex legal phenomenon in the search for opposites of the essence, elements, and features in their interconnection. The structural and functional method was used to establish the components of information support and the relationship between them. The formal and logical method enabled to formulate concepts and identify areas of information support for combating criminal offences by the SBGSU. To formulate proposals for improving information support for combating criminal offences, the forecasting method was used. Within the article: the essence of information support is clarified; the information support of criminological monitoring is studied; the possibilities of risk analysis as a component of information support of criminological monitoring are analysed; information support for combating criminal offences based on open data is considered; the prospects for using artificial intelligence are studied, and promising directions for information support for combating criminal offences by the State Border Guard Service of Ukraine are proposed.

Keywords: *information support, cross-border crime, information systems, artificial intelligence, criminological monitoring, risk analysis.*

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1. Introduction

Information support as a component of the criminological support for combating criminal offences by the State Border Guard Service of Ukraine (hereinafter – SBGSU) is to create and operate an information system which, on the one hand, would ensure the information security of the SBGSU, and on the other hand, would cover the information process of collecting, accumulating, storing, transmitting information required by the SBGSU to combat crime, and ensure information interaction with other law enforcement agencies, in particular, the subjects of integrated border management in the field of combating crime.

The development of the SBGSU information component is taking place in parallel with the processes occurring in society – processes that are caused by the improvement of information technologies, methods of analysis, information processing and the development of artificial intelligence. The state of such support should be in line with the current development of information processes. Because cross-border crime in Ukraine is constantly undergoing transformation. In the conditions of globalisation of political, economic, information and communication processes, national crime is transforming into transnational international forms³. Persons involved in illegal activities use the most up-to-date technical equipment, surveillance systems and covert receipt or transmission of information necessary for illegal activities in ultra-profitable areas, and further ways of legalising (laundering) the proceeds of crime.

For this reason, the regulatory framework in this area needs to be constantly improved. The peculiarity of the information support for combating crime by the SBGSU is in its close interconnection with the information support for integrated border management. Information cooperation in integrated border management is considered as a separate area of joint activities of law enforcement agencies in ensuring border security⁴. Currently, the problems of information support for integrated border management are as follows:

³ Gubanova E. V., *Criminality as Negative Aspect of Globalization*. Scientific Notes of Tavrida National V. I. Vernadsky University. Series: Juridical sciences. 2013. Vol. 26 (65). No. 1., p. 177.

⁴ Vikhtiuk A. V., *Legal and regulatory framework for information cooperation in integrated border management. Priority areas of science development during martial law*, XCII International Scientific and Practical Internet Conference. City of Odesa, 24 June 2022, p. 77.

- the need to develop effective mechanisms of interaction and information exchange, including automated, on possible violations of the law or identification of suspicious persons and transactions;
- insufficient speed of processing and transmission of information, which prevents from timely responding to changes in the operational situation;
- the need to continue technical re-equipment, increase the automation of processes in the field of integrated border management, introduce European standards, and ensure the development of information exchange between all subjects of integrated border management⁵.

The above aspects determine the relevance of the subject of our research.

2. The essence of information support

Stokorosa T. M. understands the concept of "information support" as a dynamic system of obtaining, evaluating, storing and processing data created for the purpose of making management decisions. The scientist reasonably points out the dual role of information support – both as a process of providing information and as a set of regulatory framework, forms of documents, implemented decisions on the scope, placement and forms of existence of information used in the information system in the process of functioning⁶.

However, this definition covers only the intellectual component of information support. As can be seen from the above problematic issues outlined in the Integrated Border Management Strategy, effective information support is possible if both intellectual and technical components are adequate. The intellectual component, in turn, is based on a methodology that allows obtaining the information necessary to make timely and correct decisions in combating crime and training of specialists of the appropriate level capable of providing the product of the required quality with proper technical equipment.

Revealing the features of information support of administrative and jurisdictional activities of law enforcement agencies, Shoptenko S. S. focuses on the process of providing, collecting, processing, analysing, systematising and recording information about an administrative legal dispute or administrative offence⁷. However, today the object of information and analytical activity as a component of information support for combating criminal offences by the SBGSU is not only information about a criminal offence, but a much wider range of statistical information and data on socio-political processes that have an impact on crime, information about the identity of a criminal offender, which allows for its

⁵ Integrated Border Management Strategy for the period up to 2025, approved by the Cabinet of Ministers of Ukraine on 24 July 2019 No. 687-r.

⁶ Stokorosa T. M., *Informatisation and information support: approaches to the interpretation of concepts*. Scientific Bulletin of NFU of Ukraine. 2008. Issue 18.9, p. 299.

⁷ Shoptenko S. S. *Administrative and jurisdictional activities of law enforcement agencies of Ukraine*: S.J.D thesis abstract: 12.00.07. Kharkiv. 2018, p. 21.

criminological profiling.

Analysing the information support of border control, Kushnir I. P., Kuryliuk Yu. B. and Filippov S. O. defined it as a set of information of appropriate expression and fixation, which is important and decisive for a particular legal situation, the performance of a specific task in the SBGSU activities, in particular for carrying out border control at air border crossing points on the state border of Ukraine. The scientists note that information support involves processing a wide range of information that ensures the fulfilment of the SBGSU tasks⁸.

So, information support of public administration in the activities of the state border protection bodies of Ukraine is a complex integrated concept that involves the management of information flows, use and processing of information that forms the basic principles and contributes to the creation of conditions for public administration in the field of state border protection of Ukraine, implementation of specific tasks and functions defined in the legislation or in certain areas (for example, combating criminal offences).

3. Information support for criminological monitoring

Scientific sources identify the following methods of information support in combating crime: statistical observation, analysis of criminal proceedings, analysis of reports, analytical information, surveys of members of the public, victimisation monitoring of individuals, content monitoring of Internet resources, method of expert assessments⁹. Each of them has its own advantages and peculiarities and can be used in combating criminal offences by the SBGSU, taking into account the peculiarities of the object and subject of this activity. At the same time, they can be used both separately and in a logical combination of all or several methods, depending on the purpose of the study. It seems that such a comprehensive activity to study the array of information necessary to combat criminal offences falls under the signs of criminological monitoring – a concept that has received considerable attention in criminology today, given that its application enables to take into account globalisation processes and the development of information technology in combating crime.

The scientific basis for the implementation of criminological monitoring is found in the research of Bandurka O. M., Blazhkiivskiyi Ye., Kovalenko A. V., Litvinov O. M., Maslova N. H., Myroniuk D., Sydorenko N. S., Orlov Yu., Fomenko A. Ye., Mukto M., Hitesh K. R., Kamalruddin S. The term "monitoring" is used by scientists in such terminological constructions as "crime monitoring" and "law enforcement monitoring", "monitoring of the state and trends of the

⁸ Kushnir I. P., Kuryliuk Yu. B., and Filippov S. O., *Information support of border control at airport border crossing points on the state border of Ukraine*. Air and space law. 2021. Vol. 4. No. 61, p. 18-19.

⁹ Beschastyi V. M., *Methods of information support as tools for collecting and processing information on crime*. Law and Society. 2017. No. 1. p. 206–212.

spread of terrorism"¹⁰, "monitoring of the crime situation", "monitoring of the operational situation".

Criminological monitoring is a system of observation, measurement and assessment of the state of a certain phenomenon or process in different periods of time, based on the knowledge of the regularities of its development, determined by practical necessity¹¹. It is the operational and analytical core of the management component of the crime prevention system, which provides the process of making criminologically significant decisions with complete (reliable), timely, comprehensive, prognostic information. It determines the adaptability, flexibility, and proactive nature of criminal prevention activities¹².

Since it is about the use of criminological monitoring to counter criminal offences by the SBGSU, the phenomenon under study – the main object – is a certain part of crime, which is manifested in the totality of criminal offences counteracted by the SBGSU. In addition, the object of criminological monitoring can include "background" phenomena for crime (alcoholism, drug addiction, prostitution), causes and conditions (determinants), social consequences of crime, the degree of criminalisation of society, individual criminal offences in the dynamics of changes in individual components of their mechanism, depending on the object of the offence, methods, means, motives for committing the crime; the state of combating crime¹³, – those elements, knowledge of which in the course of implementation of the practical and transformative function of criminology can be used to improve the fight against crime.

The following stages of criminological monitoring are distinguished: 1) pre-monitoring stage; 2) diagnostic stage; 3) evaluation stage; and 4) post-monitoring stage¹⁴. The content of these stages shows the integrity of the research process, which begins with the formulation of goals, objectives, terms, hypotheses, research tools and techniques, adaptation of methods to a specific purpose and conditions of the research, and continues with the collection of information about the factors that affect the object of research, as well as the object of research itself, and the assessment of the possibility of solving problematic issues using the available forces and facilities. During criminological monitoring, recommendations are developed to optimise relevant activities and select means of influencing negative trends; monitoring findings are provided for further use, taking

¹⁰ Regulation on the Unified State System of Prevention, Response and Suppression of Terrorist Acts and Minimisation of Their Consequences, approved by the Cabinet of Ministers of Ukraine on 18 February 2016, No. 92. URL: <https://zakon.rada.gov.ua/laws/show/92-2016-%D0%BF#n9>.

¹¹ Lytvynov O., *Criminological monitoring*, Bulletin of the Criminological Association of Ukraine. 17 March 2018. URL: <https://visnikkau.webnode.com.ua/news/kriminologichnij-monitoring/>.

¹² Orlov Yu. V., Myroniuk D. M., *Criminological monitoring of the legal regulation effectiveness as a tool for combating crime*. Bulletin of the Criminological Association of Ukraine. 2014. No. 6. p. 161–177.

¹³ Blazhkovskiy Ye. *Monitoring the fight against crime in Ukraine*: monograph. Kharkiv: Zolota mylia, 2013. 372 p.

¹⁴ Lytvynov O., *op. cit.*

into account the needs of practice, control over the implementation of relevant measures, evaluation of their effectiveness and adjustment if necessary.

The specificity of criminological monitoring in the SBGSU is that at each of these stages, information cooperation in integrated border management with both national and international partners takes place (or may take place, depending on the need).

4. Risk analysis as a component of information support for criminological monitoring

The components of criminological monitoring in the SBGSU are risk analysis, risk profiling and criminal analysis, which are implemented systematically on an ongoing basis. Also, there are *other specific information support measures* carried out at the departmental, national and international levels.

The risk analysis system has been implemented in the SBGSU since 2006. Since then, three programmes have been implemented to introduce a risk management system in the SBGSU¹⁵. This system is based on the principles set out in the Integrated Border Management Strategy, has an anti-crime focus and is an integral part of integrated border management.

Since its introduction, the SBGSU risk analysis system has been developing in three areas: 1) the functioning of analytical centres established by the integrated border management entities; 2) improvement of information exchange and joint risk analysis with the border services of foreign countries and Frontex; 3) cooperation with Frontex, EUAM, EUBAM, IOM and OSCE on the exchange of statistical information, joint assessment of certain types of illegal activities¹⁶.

Risk analysis in the SBGSU is defined as a set of procedures and methods for processing information in order to identify existing and potential risks in the sphere of state border security¹⁷. It is aimed at providing information and analytical support for managerial decision-making to identify existing (potentially possible) risks and preventive response to manifestations of cross-border illegal activity at the state border of Ukraine, in particular by risk profiling in conditions of limited resources and capabilities¹⁸.

Types of risk analysis by level are strategic, operational and tactical; by purpose – periodic, thematic, and situational. The risk analysis process begins with an assessment of local, regional, national and global threats. These activities

¹⁵ Risk analysis / Border protection / Activities. State Border Guard Service of Ukraine. Official website. URL: <https://dpsu.gov.ua/ua/rozvitok-sistemi-analizu-rizikiv-derzhprikordonsluzhbi/>.

¹⁶ Ibid.

¹⁷ Guidelines for conducting risk analysis in the State Border Guard Service of Ukraine, approved by Order of the Ministry of Internal Affairs of Ukraine No. 1007 on 11 December 2017. URL: <https://zakon.rada.gov.ua/laws/show/z0091-18#Text>.

¹⁸ Integrated Border Management Strategy for the period up to 2025, approved by the Cabinet of Ministers of Ukraine on 24 July 2019 No. 687-r.

are based on the following information: information received in the course of operational activities, from international organisations, border guard and other authorised bodies of foreign states, in accordance with international agreements, mass media, including the Internet, results of strategic analysis, own analytical developments; intelligence, operational and investigative data (if necessary). It is also necessary to take into account other sources of information support of the SBGS, such as: social networks, messengers, databases in information systems, video surveillance processing tools, artificial intelligence resources, etc.¹⁹

Based on their results, the factors of influence – external and internal – that negatively affect the security of the state border are identified. Threats can be identified at one of three levels – low, moderate, and high²⁰. For terrorist threats, other, separate levels are defined – "grey (possible threat)"; "blue (potential threat)"; "yellow (probable threat)"; "red (real threat)"²¹.

An important element of risk analysis is risk profiling, which is a set of methods and techniques for assessing risks²². Risk profiling is one of the most important forms of applying risk analysis in the day-to-day management and control of the state border. It is not practically possible to carry out 100% screening of persons, vehicles and cargoes. Controlling authorities have limited resources, so they need to use them with maximum efficiency. Risk profiling ensures that controls are applied where they are most effective²³.

In the course of risk profiling, depending on the available information about the threat, preventive, potential, and certain risk indicators are identified. In developing risk profiles, in addition to the results of the risk analysis provided by the relevant SBGSU units, proposals from other integrated border management subjects, the International Organization for Migration office in Ukraine are taken into account.

Thus, in accordance with the requirements of the Order of the Administration of the State Border Guard Service of Ukraine "On the Organisation and Application of Risk Profiles" of 26.12.2023, 13 national risk profiles were approved, which in many respects differ from the so-called "traditional" ones

¹⁹ Kushnir I. P., *Sources of information support for the activities of the State Border Guard Service of Ukraine*. Legal novels. 2022. No. 17. p. 21-27.

²⁰ Guidelines for conducting risk analysis in the State Border Guard Service of Ukraine, approved by Order of the Ministry of Internal Affairs of Ukraine No. 1007 on 11 December 2017. URL: <https://zakon.rada.gov.ua/laws/show/z0091-18#Text>.

²¹ Regulation on the Unified State System of Prevention, Response and Suppression of Terrorist Acts and Minimisation of Their Consequences, approved by the Cabinet of Ministers of Ukraine on 18 February 2016, No. 92. URL: <https://zakon.rada.gov.ua/laws/show/92-2016-%D0%BF#n9>.

²² Guidelines for conducting risk analysis in the State Border Guard Service of Ukraine, approved by Order of the Ministry of Internal Affairs of Ukraine No. 1007 on 11 December 2017. URL: <https://zakon.rada.gov.ua/laws/show/z0091-18#Text>.

²³ Bereziuk V., Zabolotna O., Samoilenko O., *Profiling the risk of the introduction and spread of COVID-19 coronavirus infection in Ukraine at state border crossing points*. Collection of scientific papers of the National Academy of the State Border Guard Service of Ukraine. Series: Military and Technical Sciences. 2020. No. 2 (83). p. 41–57.

formed before the start of Russia's full-scale invasion of Ukraine and are aimed at ensuring national and military security.

Approved risk profiles are to be studied and used by the personnel of regional directorates, state border protection bodies and maritime guard units. Access to them is ensured by entering risk profiles into the Risk Profile Form module of the Risk subsystem. The results of the risk profiles are entered into the Gart-5 ITS database.

The risk profiles developed by the SBGSU include the following components: date of development, initiator of the risk profile development, structural unit that developed the risk profile, territorial scope, aggregate information about the threat, risk indicators (indicator name, indicator value), action algorithm (measures and forms of control in case of identification of certain risk indicators, recommendations when identifying a suspicious person, interviewing a suspicious person, in case of hostage-taking).

The report on the results of risk profiling for 2022 states that the risk profiling focused on preventive measures to counter the main threats in the field of border security, took into account the priority classification system of risk indicators, and took into account proposals from other subjects of integrated border management – the Security Service of Ukraine, the National Police, the State Customs Service, and the State Migration Service. Thus, the report states that 31 risk profiles were applied in 2022, including 14 national, 3 regional, and 14 local ones. The results of risk profiling account for 42% of the total results of operational and service activities. In particular, 20 migrants were detained for violating the state border, 1,540 potential migrants were not allowed to cross, 298 weapons, 10,114 pieces of ammunition, 1,088 forged and other people's documents, goods worth about UAH 262 million, 67 kg of drugs, 396 thousand packs of cigarettes, 3,212 litres of alcohol, 82 kg of amber were found. The SBGSU also identified 258 people who could be involved in terrorist activities and anti-state activities in Ukraine, 80 people who violated the procedure for entering/exiting the TOT of Ukraine within the Autonomous Republic of Crimea, Luhansk and Donetsk regions, 141 people possibly involved in the armed aggression of Russia in Ukraine, who were detained by SBGSU personnel while serving at checkpoints²⁴.

Let us review the process of taking into account risk profiles on the example of combating human trafficking. We can distinguish three main areas of combating human trafficking by the SBGSU bodies and units:

- combating trafficking in human beings at border crossing points during border control;
- combating trafficking in human beings beyond the border crossing points by stopping the illegal trafficking of victims of human trafficking across the state border of Ukraine;

²⁴ Risk profiling in the State Border Guard Service of Ukraine: Newsletter for 2022.

- combating trafficking in human beings by operational and search units.

However, risk profiling is carried out only during border control, since the territorial scope of the risk profile "Trafficking in Human Beings from/to Ukraine and Illegal Removal of Children of Ukrainian Citizens" applies only to border crossing points (control points) at the state border. However, it is advisable to consider its application in other areas as well.

The first area. In defining the purpose of border control, the legislator emphasises its law enforcement orientation: border control is carried out in order to counteract the illegal movement of persons across the state border, illegal migration, human trafficking, as well as illegal movement of weapons, narcotic drugs, psychotropic substances and precursors, ammunition, explosives, materials and items prohibited for movement across the state border (part 2 of Art. 2 of the Law of Ukraine "On border control").

Border control is carried out on two levels, which increases the possibility of identifying victims of human trafficking. When carrying out first-line border control, measures are taken to check the minimum necessary to determine whether there are legal grounds for crossing the state border by persons, vehicles and cargoes (clause 8 of Art. 1 of the Law of Ukraine "On border control"). In particular, the inspection of passports or other documents specified by law with the use of technical control measures, during which border guards may detect forged documents or those that do not belong to the bearer. Thus, in 2022, the SBGSU prevented 2,074 attempts to cross the state border with forged documents, 44 – with other people's documents, 3,273 – with invalid documents, 467 people travelling without documents. It should be borne in mind that traffickers often resort to the production or acquisition of forged documents in order to ensure the trafficking of victims across the state border. When checking documents, border guards determine the presence or absence of information in the databases on law enforcement orders regarding persons crossing the state border.

In addition, an effective means of identifying victims of human trafficking is to interview people during border control. The following may indicate the presence of a potential human trafficking risk indicator: 1) the person cannot provide details of the travel route; 2) the person does not know where and when they received a foreign passport of a citizen of Ukraine; 3) the person does not know the name of the company that issued the travel documents; 4) the person does not know the meeting party, the address or name of the employer, the place of future residence and the duration of stay; 5) the person returning to Ukraine reports that they have been a victim of human trafficking. Other risk indicators are also taken into account: purpose of the trip, availability and condition of documents, signs of their forgery, appearance of the person, contents of the luggage, route, behaviour, availability of sufficient financial support for the trip.

In the event of certain doubts about the legality of crossing the state border by a foreigner or stateless person, including to determine the possibility that the person is a victim of human trafficking, second-line control is carried out.

It should also be noted that the Council of Europe Convention on Action against Trafficking in Human Beings²⁵ regulates the strengthening of border control measures that may be necessary to prevent and detect trafficking in human beings. In particular: taking measures to prevent traffickers from using vehicles operated by commercial carriers; introducing an obligation for commercial carriers to ensure that all passengers have the necessary travel documents (under threat of sanctions); denying entry or cancelling visas to persons involved in trafficking in human beings; strengthening cooperation between border services (Art. 7 of the Convention).

The second area is to combat trafficking in human beings beyond the border crossing points by stopping the illegal trafficking of victims of human trafficking across the state border of Ukraine. Such activities are ensured by conducting patrol, search, control and security measures by border details patrolling the state border. Moreover, in this area, measures to combat human trafficking should be considered in the context of comprehensive activities to combat illegal migration. As noted by Yu. B. Kuryliuk, illegal migration is considered a "background phenomenon for crime", as it is usually associated with various types of illegal activities, including human trafficking, smuggling, poaching, and increasingly migrants are influenced by extremist and terrorist organisations²⁶.

The third important area is combating trafficking in human beings by operational and search units. Operational and search activities to combat trafficking in human beings are mainly searching in nature, carried out by special covert methods and means and aimed at timely detection of criminal offences and perpetrators, victims of trafficking in human beings, establishment of factual data important for further investigation, as well as circumstances that contributed to the commission of criminal offences.

The effectiveness of combating trafficking in human beings by the SBGSU bodies and units is based on a comprehensive approach to combating offences, which is carried out with due regard to risk profiling and the organisation of proper information interaction with other law enforcement agencies in these areas²⁷. Therefore, we believe that familiarisation with the risk profile of human trafficking and other risk profiles, their study and consideration in view of the content of risk profiles should be carried out not only by officials serving at border crossing points, but also by officials of other bodies and units involved

²⁵ Council of Europe Convention on Action against Trafficking in Human Beings (2005). https://zakon.rada.gov.ua/laws/show/994_858.

²⁶ Kuryliuk Yu. B., *Administrative, Legal and Criminological Principles of Ensuring Law and Order in the Border Area of Ukraine*: Thesis of S.J.D: 12.00.07, 12.00.08. National Academy of Management; Classic Private University. Kyiv-Zaporizhzhia. 2020, p. 142.

²⁷ Stepanova Yu. P., *Combating trafficking in human beings by bodies and units of the State Border Guard Service of Ukraine*, in H. Ya. Savchyn, U. O. Tsmots (eds.) *State policy on combating human trafficking: Ukraine and the world: Collection of abstracts of the International Scientific and Practical Conference (8 October 2021)*, Lviv State University of Internal Affairs, Lviv, 2021. p. 180–183.

in operational activities, in particular, operational and search units.

In turn, employees of operational and search units actively use operational criminal analysis in their work, the pioneer of which was the SBGS of Ukraine²⁸. Criminal analysis is a specific type of information and analytical activity, which consists in identifying and determining as accurately as possible the internal links between information relating to a criminal offence and any other data obtained from various sources, their use in the interests of conducting operational and search activities, their analytical support^{29,30}.

The use of criminal analysis in Ukraine has been launched in the SBGSU since 2006. Its implementation was actively supported by the US Department of State, IOM and the Polish Border Guard, with financial and technical assistance from the OSCE and EUBAM. In particular, the State Border Guard Service was provided with the IBM i2 Analyst's Notebook software free of charge³¹, which allows processing large amounts of information related to telephone contacts and other resources accumulated in databases. In addition, domestic software and hardware systems "Gart" (Gart-1, Gart-1/P, Gart-1/KDL, Gart-2, Gart-3, Gart-3/P, Gart-2/O, Gart-19, Gart-12, ARM "Violator", ARM "Surface Situation", ARM "e-Inspector"), databases of other law enforcement agencies, mobile operators, banking institutions, and other state and non-state structures are actively used by border guard units.

The methodology of criminal analysis is used in the following sequence: an operative collects data, submits it to the criminal analysis unit to verify the information and obtain new data. Criminal analysis can be carried out both after the fact and proactively. Based on the results of the data processing, the criminal analyst provides the operative with information on the most optimal further steps³².

An important component of the implementation of criminal analysis is the training of specialists, which was initially carried out at the Academy of the Polish Border Guard. Later, border guards began to share their experience in criminal analysis with the National Police³³.

5. Information support for combating criminal offences based on

²⁸ Fedchak I. A., *Fundamentals of criminal analysis: Study Guide*. Lviv: Lviv State University of Internal Affairs, 2021. p. 121.

²⁹ Vlasiuk O. V., *The role and place of criminal analysis in the detection and investigation of crimes at the state border of Ukraine*. Materials of the permanent scientific and practical seminar. Kharkiv: Institute of Legal Training for the Security Service of Ukraine of the Yaroslav Mudryi National Law Academy of Ukraine, 2011. Issue 3. Part 1, p. 83.

³⁰ Kushnir I., Tsarenko O., Tsarenko S., *Legal and organizational problems on identification of persons in activities of the State Border Guard Service of Ukraine*, Juridical Tribune - Tribuna Juridica, Volume 11, Issue 1, March 2021. p. 113–130.

³¹ Filippov S. O., *Criminological Principles of Counteracting Transborder Crime*: Doctoral dissertation: Specialty 12.00.08. SBGSNA, DSUIA. Khmelnytskyi, 2019, p. 407.

³² In the footsteps of the "tarantula" / Border Guard of Ukraine. No. 41. 04 November 2016. [https://dpsu.gov.ua/upload/file/pu_41_2016_\(2\).pdf](https://dpsu.gov.ua/upload/file/pu_41_2016_(2).pdf).

³³ Ibid.

open data

Other individual information support measures include Open Source Intelligence (OSINT), the Automated Pre-Travel Information Processing System (API/PNR), checks against the International Criminal Police Organisation database.

So, OSINT is called open source intelligence. This is a method of collecting operational and operationally relevant information from sources of information that are publicly available and open. Such sources provide data in the format of text, video, images, audio recordings, and OSINT provides accelerated analysis of that information³⁴. The main sources of online OSINT include websites; social networks (Facebook, Instagram, TikTok, LinkedIn, Twitter, Telegram, etc.); personal credentials (first name, last name, nickname, email address, phone number, etc.); maps, documents, photos/videos, IP addresses, business and state registers, virtual currency transactions, Internet archives³⁵. It results in specific information, collected and structured in a particular way, and for a specific purpose, to answer a specific question or to achieve a specific goal. When using the OSINT methodology by law enforcement agencies to obtain operationally relevant information, it is necessary to take into account the need to process significant amounts of data from reliable sources of information and the high cost of software^{36,37}.

Analysing the practice of using open sources of information in the field of state security, Bykov I. O. notes the active development of projects that use the OSINT methodology in the investigation of crimes of military aggression³⁸. For example, the Truth Hounds organisation successfully uses this methodology in combination with eyewitness and victim testimonies to document crimes of military aggression and search for war criminals³⁹. Its employees have created a database that accumulates information from the media, allows it to be analysed and used promptly. Thus, during 2023, the organisation's monitors entered 13,273 episodes into the database – the information about incidents with signs of war crimes. They created 32,119 new entries in the I-DOC database (a system

³⁴ What is Open-Source Intelligence (OSINT)?/ Opendtext. URL: <https://www.opendtext.com/what-is/open-source-intelligence-osint>.

³⁵ Halustian O.A., *Profiling and OSINT: modern technologies for detecting collaborators and collaboration activities in wartime*. Topical issues of using OSINT methods and means in the work of national statehood defence units: Roundtable Proceedings (Kyiv, 31 March 2023): in 2 parts. Part 1. Kyiv: SSU NA, 2023, p. 24-25.

³⁶ Bykov I. O., *Open Data and OSINT in the investigation of war crimes. Current issues of criminal proceedings in modern conditions*: Proceedings of the international scientific-practical conference. Odesa, 31 May 2023. Odesa: OSUIA, 2023, p. 132.

³⁷ Bykov I., *The use of open sources of information (OSINT) in the sphere of state security: technologies and prospects* / YouTube / Helvetika Publishing Group. <https://www.youtube.com/watch?v=c23liBuStsE>.

³⁸ Bykov I. O., *op. cit. (Open Data and OSINT...)*, p. 38-41.

³⁹ About us / Truth Hounds URL: <https://truth-hounds.org/en/about/>.

for analysing and systematising investigations of war crimes and crimes against humanity), including information on 667 incidents with signs of war crimes, 1,521 witnesses to war crimes, 1,736 attacks on internationally protected objects, 2,067 identified victims, and carried out 5 independent investigations⁴⁰. Using OSINT intelligence, employees of the organisation identified all units of the armed forces of the Russian Federation that occupied the Sumy region in February-April 2022⁴¹, identified a significant part of the personnel of the 26th Missile Brigade of the 6th Combined Arms Army of the Russian Federation, together with its command, who most likely gave the order to attack Chernihiv on 19 August 2023, when 214 people were injured in the explosion, seven of whom died⁴².

An important part of building an effective OSINT strategy is finding the right tools. The most common free tools today are Maltego, Harvester, Metagoofil, SpiderFoot, Framework, DarkOwlVision, PhoneInfoga. At the same time, when conducting research, a criminal analyst should take care of information security so as not to disclose information about the user and not to jeopardise the operation being conducted⁴³.

Law enforcement agencies of foreign countries have created special units that carry out intelligence on the basis of open sources of information. For example, the Royal Canadian Mounted Police OSINT, Scotland Yard OSINT, the OSINT unit of the New York Police Department, Israel's Hatsaf, the British BBC Monitoring, the Australian Office of National Assessments,⁴⁴ etc. The research structures of the OSINT community in Ukraine are the NGOs "Institute of Post-Information Society", "Molfar", "YouControl", "Kiber Polk". A characteristic feature of the Russian-Ukrainian war is the cyber front, the establishment and subsequent mobilisation of the cyber volunteer movement.

Currently, the Office of the Prosecutor General, the Security Service of Ukraine, and the Ministry of Internal Affairs are actively implementing the OSINT methodology. For example, as a pilot project, in June 2023, the Odesa State University of Internal Affairs introduced a training course on searching and analysing information from open sources OSINT, organised by the university's research laboratory for problematic issues of criminal analysis⁴⁵. The use of

⁴⁰ Annual report of 2023 / TruthHounds. https://truth-hounds.org/wp-content/uploads/2024/01/ric_hnyj-zvit-2023.pdf.

⁴¹ The units of the Russian armed forces that occupied the Sumy region / OSINT-intelligence / TruthHounds, https://truth-hounds.org/cases/pidrozdily-zs-rf-shho-okupovuvally-sumsh_hynu/.

⁴² Actors in the attack on the Chernihiv theatre / OSINT-intelligence / TruthHounds. URL: <https://truth-hounds.org/cases/dijovi-osoby-ataky-na-chernigivskiy-dramteatr/>.

⁴³ Kireieva O. S., *Using OSINT methods in the work of criminal analysts*. Topical issues of using OSINT methods and means in the work of national statehood defence units: Roundtable proceedings (Kyiv, 31 March 2023): in 2 parts. Part 1. Kyiv: SSU NA, 2023. 75 p.

⁴⁴ Klimushyn P. S., Bilobrov A. V., *Using OSINT technologies to obtain information*. Combating crime and human trafficking. 2020. p. 135–137. URL: https://www.univd.edu.ua/general/publicshing/konf/27_05_2020/pdf/39.pdf.

⁴⁵ Welcome to the course on search and analysis of information from open sources (OSINT - Open source intelligence) / Odesa State University of Internal Affairs. Official website. URL:

OSINT analysis methodology in the activities of specialised SBGSU bodies and units that counter criminal offences, as well as for searching for SBGSU personnel who are missing or in captivity, and exposing enemy agents, is highly prospective. At the same time, military personnel need training in information hygiene and cyber hygiene⁴⁶.

One of the types of information technologies for collecting and analysing information from open sources is another area of intelligence - HUMINT (human intelligence), literally "intelligence on people". These technologies include social media monitoring, surveys, social engineering, legendary conversations, etc⁴⁷. Profiling is also identified as a promising tool for identifying collaborators⁴⁸. Profiling is a law enforcement tactic in which a certain set of characteristics (profiles) is used to find and detain a person who has committed a crime (criminal profiling) or to identify people who are likely to be involved in criminal activity (behavioural profiling)⁴⁹.

The considered methods of information and analytical support for combating criminal offences are mainly aimed at detecting offences and detaining the individuals who committed them. However, the emergence of new technologies, such as artificial intelligence (AI) applications, has opened up a new era of possibilities to help law enforcement agencies prevent crime.

New technologies enable overworked and understaffed law enforcement agencies to collect, process, analyse and present relevant data for subjects combating any types of criminal offences. In particular, AI is used to collect and interpret links and patterns in financial records, geospatial images, surveillance camera footage, social media data, public records, news feeds, and many other open and closed sources.

One of the most useful applications of AI in the fight against crime is in resource allocation. As virtually all law enforcement agencies are under-staffed and underfunded, the proper allocation and deployment of resources plays an important role in combating crime. Sophisticated algorithms are effective in helping to understand who, when, where, how and why a criminal offence may be committed within the jurisdiction of certain law enforcement agencies⁵⁰, including the most likely ways and means of violating the state border. AI can identify relevant crime prevention models and ways to implement them, in particular by

<http://surl.li/izigs>.

⁴⁶ Marenych O. V., *Processing of primary data, search for information in the WEB environment*. Topical issues of using OSINT methods and means in the work of national statehood defence units: Roundtable Proceedings (Kyiv, 31 March 2023): in 2 parts. Part 1. Kyiv: SSU NA, 2023. p. 39–41.

⁴⁷ Klimushyn P.S., Bilobrov A.V., *op. cit. (Using OSINT technologie...)*, p. 135–137.

⁴⁸ Halustian O.A., *op. cit. (Profiling and OSINT...)*, p. 25.

⁴⁹ Halustian A. O., Zakharenko L.M., Motliakh O.I., *Profiling technologies in investigative activities*. Kyiv: 2019. 45 p.

⁵⁰ Leveraging Artificial Intelligence for Crime Prevention. March 2022 URL: <http://surl.li/qmjam>

adjusting the allocation of resources, such as scheduling border patrols, determining the optimal time and routes of their movement, the procedure for reconnaissance and search groups, the use of mobile units to strengthen border protection, the location of engineering facilities, technological equipment of border units, etc., while taking into account seasonal, geographical or demographic trends, or fluctuations in passenger flows or alterations in illegal activities due to certain socio-economic changes.

6. Use of artificial intelligence

Another area of information support is artificial intelligence (AI). Global trends show a marked increase in the use of video surveillance combined with AI. Owing to advances in the field of analytics, this has led to the expansion of remote and preventive video surveillance systems⁵¹. Chinese scientists have already developed a system for facial recognition, recognising people by their gait. The United States uses the ShotSpotter system, which is capable of detecting the type of firearm, the coordinates of the scene of the incident using sound sensors⁵². The face recognition technology (FRT) developed by the Israeli company Cortica provides ethical and accurate biometric detection and is aimed at finding behavioural anomalies in human movements that indicate that a person is about to commit a crime. One Mind Hypervisor SVI combines licence plate recognition, vehicle registration and facial recognition solutions to support police departments in combating car theft⁵³.

In view of this and taking into account the peculiarities of the SBGSU operational activities both at and outside border crossing points, it is worth recognising the promising use of AI capabilities in combination with video surveillance systems to counter criminal offences.

The prospective areas of information support for combating criminal offences by the SBGSU are the use of AI for the purpose of: optimisation of resource allocation; development of relevant models for combating crime in the SBGSU; verification of the effectiveness of crime prevention measures; use of AI systems in combination with video surveillance systems.

At the same time, possible risks associated with the use of AI should be taken into account. The introduction of such technologies as the iBorderCtrl ar-

⁵¹ Kurt Takahashi, *What factors had the biggest impact on security in 2023?* URL: <http://surl.li/qlzcc>.

⁵² Mordvyntsev M. V., Khlietkov O. V., Nytsiuk S. P., *Trends in the global development of video surveillance systems for public security*. Counteraction to cybercrime and human trafficking: Proceedings of the international scientific and practical conference. (Kharkiv, 18 May 2021) / Ministry of Internal Affairs of Ukraine, Kharkiv National University of Internal Affairs; NGO "Global Centre for Interaction in Cyberspace". Kharkiv, 2021. p. 71–72.

⁵³ Corsight AI partners with One Mind Technologies to enhance security in smart cities. URL: <http://surl.li/qlzdw>.

tificial intelligence system or ARI/PNR in the interests of border security, Filipov S.O. notes, creates certain problems due to the gap between the introduction of innovations and their normative regulation⁵⁴.

Legal regulation of the use of AI should be carried out at the international level, given the global scale of its use and the corresponding threats. It is currently under development. Thus, on 26 January 2023, the US National Institute of Standards and Technology published its AI risk management framework⁵⁵. After that, a number of important documents were adopted – the US Presidential Decree of 30 October 2023 on safe, reliable, and trustworthy AI⁵⁶, and the Bletchley Declaration on AI Security was signed by 28 states and the EU on 31 October 2023⁵⁷.

Thus, the introduction of AI opens up significant opportunities for combating criminal offences by the SBGSU, but its use is possible only with the application of the necessary security measures, proper legal regulation and human coordination – primarily to avoid the risks of unplanned control by AI over the processes regulated by the SBGSU, human rights, and information security.

However, AI's conclusions should be advisory in nature. The subjective assessment of a law enforcement officer should be decisive. Especially when a criminal offence involves a victim (in particular, trafficking in human beings) or a migrant is involved in the mechanism of its commission.

7. Conclusions

So, when studying information support as a component of criminological support for combating criminal offences by the State Border Guard Service of Ukraine, we have come to the following conclusions:

It is determined that the purpose of information support for combating criminal offences of the SBGSU is to form an information system which, on the one hand, would ensure information security of the SBGSU, and on the other hand, would cover the information process of collecting, accumulating, storing, transmitting information required by the SBGSU to combat crime, and would

⁵⁴ Filipov S. O., *Certain aspects of the use of passenger data (ARI/PNR) in the interests of border security*. Rule of law. 2021. No. 43. p. 169–176. <http://pd.onu.edu.ua/article/view/240997/241027>.

⁵⁵ AI Risk Management Framework / Information Technology Laboratory / NIST. URL: <https://www.nist.gov/itl/ai-risk-management-framework>.

⁵⁶ Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence / The White House. URL: <https://www.whitehouse.gov/briefing-room/presidential-actions/2023/10/30/executive-order-on-the-safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence/>.

⁵⁷ The Bletchley Declaration by Countries Attending the AI Safety Summit, 1-2 November 2023 / GOV.UK. URL: <https://www.gov.uk/government/publications/ai-safety-summit-2023-the-bletchley-declaration/the-bletchley-declaration-by-countries-attending-the-ai-safety-summit-1-2-november-2023>.

ensure information interaction with other law enforcement agencies, in particular, the subjects of integrated border management in the field of combating crime.

The expediency of introducing criminological monitoring of combating criminal offences in the SBGSU as a certain system capable of combining the main methods of information support for combating criminal offences is substantiated: statistical observation, analysis of criminal proceedings, analysis of reports, analytical information, surveys of members of the public, victimisation monitoring of individuals, content monitoring of Internet resources, method of expert assessments.

It is established that today the components of criminological monitoring in the SBGSU include risk analysis, risk profiling and criminal analysis (which are implemented systematically on an ongoing basis), as well as other separate information support measures are carried out at the departmental, national and international levels: Open Source Intelligence (OSINT), the Automated Pre-Travel Information Processing System (API/PNR), checks against the International Criminal Police Organisation database, use of artificial intelligence.

It is proposed to consider the use of artificial intelligence as a promising area of information support for combating criminal offences by the SBGSU in the following areas: 1) optimisation of resource allocation; 2) formation of relevant models of combating criminal activity in the SBGSU; 3) verification of the effectiveness of measures to combat criminal activity; 4) use of artificial intelligence systems in combination with video surveillance systems.

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