УДК 343.98

DOI: 10.31733/2078-3566-2024-5-22



Valentin BIDNIAK®
Ph.D. in Law, Post Doctoral Student
(Dnipro State University of Internal Affairs,
Dnipro, Ukraine)

COOPERATION OF PRE-TRIAL INVESTIGATION BODIES WITH KNOWLEDGEABLE PERSONS IN THE COURSE OF INVESTIGATION OF CRIMINAL OFFENCES RELATED TO PUBLIC FINANCING OF THE HEALTHCARE SECTOR

Валентин Бідняк. ВЗАЄМОДІЯ ОРГАНІВ ДОСУДОВОГО РОЗСЛІДУВАННЯ З ОБІЗНАНИМИ ОСОБАМИ ПІД ЧАС РОЗСЛІДУВАННЯ КРИМІНАЛЬНИХ ПРАВОПОРУШЕНЬ, ПОВ'ЯЗАНИХ ІЗ ДЕРЖАВНИМ ЗАБЕЗПЕЧЕННЯМ ФУНКЦІОНУВАННЯ СФЕРИ ОХОРОНИ ЗДОРОВ'Я. Досліджено особливості взаємодії уповноважених осіб із судовими експертами, фахівцями органів державного фінансового контролю, спеціалістами в різних галузях знань під час досудового розслідування за фактами протиправної діяльності у сфері охорони здоров'я. На підставі аналізу нормативно-правової бази та наукових здобутків провідних вчених визначено форми такої взаємодії, що полягають у: 1) залученні спеціаліста для проведення слідчих (розшукових) дій, негласних слідчих (розшукових) дій, заходів забезпечення кримінального провадження, 2) призначенні судових експертиз (судово-економічної, судово-почеркознавчої, товарознавчої, комп'ютерно-технічної, телекомунікаційної, фоноскопічної, технічної експертизи документів тощо), 3) взаємодії з органами державного фінансового контролю (фінансовий аудит, ревізії (інспектування), моніторинг закупівлі та перевірка закупівель), 4) консультації (письмові та усні) та ін.

**Ключові слова:** форми взаємодії, слідчий, експерт, спеціаліст, ревізор, судові експертизи, досудове розслідування, кримінальні провадження, сфера охорони здоров'я.

Relevance of the study. In today's challenging environment, the healthcare system is undergoing dramatic changes, with martial law exacerbating the negative consequences. When countering criminal offences in the healthcare sector, law enforcement officers face various ways of committing criminal offences related to misappropriation, embezzlement or seizure of public funds through abuse of office; public procurement in violation of the law; misuse of medical facilities and medical equipment; excessive write-off of medicines and medical devices; misappropriation of funds by writing them off for routine repairs of buildings and equipment. The above criminal torts are characterised by a mercenary motive, non-obviousness and a high level of latency.

In this regard, all forms of interaction between law enforcement and knowledgeable persons are of particular importance in the system of measures to counteract them in order to timely detect criminal acts that are being prepared or have already been committed. However, the state of this activity is low, as evidenced by statistical data, as well as the permanent disclosure of multi-episodic and/or ongoing criminal offences that have been committed for several years.

Thus, according to the Prosecutor General's Office, in 2024, 3402 criminal offences were registered in the healthcare and social assistance sector over 11 months, with 2101 proceedings involving notices of suspicion served on individuals, in which 1967 proceedings were sent to court, including 1958 with an indictment, and 941 proceedings were closed. For a partial calendar year, the figures exceed the previous one. Thus, in 2023, 3310 criminal offences were registered, in 1964 proceedings, persons were served with notices of suspicion, 2,461 proceedings were sent to court, including 2457 with indictments, and 1274 criminal proceedings were closed [11].

**Recent publications review.** The conceptual foundations of criminal offences investigation and the issues of using specialised knowledge in criminal proceedings have been thoroughly researched by such well-known criminalists as G. Bidniak, N. Filipenko,

d\_cpsi@dduvs.edu.ua

144 ISSN 2078-3566

<sup>©</sup> V. Bidniak, 2024 ORCID iD: https://orcid.org/0000-0001-6243-1939

A. Ishchenko, N. Klimenko, V. Konovalova, Y. Korukhov, V. Lukashevych, E. Lukianchykov, V. Lysychenko, I. Pyrig, M. Saltevskyi, M. Shcherbakovskyi, V. Shepitko and others. Certain issues of investigation of economic crimes were studied by G. Matusovskyi, O. Pchelina, R. Stepaniuk, A. Volobuiev but the issues of interaction of law enforcement officers with persons with special knowledge in criminal proceedings on the facts of offences related to the state support of the healthcare sector require modern research in accordance with the norms of legislation and forensic practice.

The article's objective is to investigate the forms of interaction of pre-trial investigation officers with knowledgeable persons and to identify those which are relevant in the investigation of criminal offences related to the State provision of healthcare.

**Discussion.** Scientists, in particular, E. Lukianchikov, consider interaction as a method of organisation, including a set of methods and techniques of joint coordinated activities, a system of relations and legal relations of interacting subjects, where the main role belongs to the investigator. The concept of forms of interaction is often confused with the concept of its methods or directions. However, the forms of interaction cannot be reduced only to certain ways of communication between the investigator and a person with specialised knowledge. The concept of form is broader than the concept of method. A form is a way of organising something, a type, structure, method of performing any action, a strictly established order in any case. The form of interaction as a way of organisation includes a set of methods and techniques of joint coordinated activity, a system of relations and legal relations of interacting subjects. It is clear that the main, unchanging and permanent subject of interaction in procedural forms is the investigator [8].

V. Pletenets notes the following forms of interaction – procedural, non-procedural, which will be determined in each case, taking into account the assessment of the needs of expediency and the possibility of their implementation. The productive style of cooperation and high-quality performance of joint tasks can be facilitated by mutual high qualities: efficiency, competence, organisation, exactingness, morality, etc. of its participants, as well as the prevailing conditions of the investigation, awareness of the presence and degree of opposition to the pretrial investigation, etc. The level of effectiveness of cooperation in the context of counteraction to the pre-trial investigation should be assessed from the point of view of minimising the possibility of occurrence of the above-mentioned manifestations and the effectiveness of their overcoming [10, p. 283].

M. Efimov, N. Pavlova, S. Chuchko note the general conditions of cooperation, including: strict observance of the law; planning; speed, activity and wide use of scientific and technical means in the course of investigation; mandatory involvement of the public; correct attitude to the evaluation of evidence; knowledge by each participant of the interaction of the powers and forms of activity of the investigation and inquiry bodies; precise delimitation of the competence of the participants of the interaction; taking into account the leading role of the investigator in the process of interaction; non-disclosure of pre-trial investigation data, etc. [6, p. 116].

Employees of the National Police of Ukraine, the National Anti-Corruption Bureau of Ukraine, the Bureau of Economic Security of Ukraine and the State Bureau of Investigation, which have jurisdiction over this category of criminal proceedings, mostly interact with auditors, auditors, forensic experts who have specialised knowledge and without whom it is impossible to achieve the objectives of criminal proceedings.

Scholars and practitioners pay special attention to such a form of interaction as the appointment of forensic examinations. Interviews with employees revealed that 100 per cent of them ordered various types of forensic examinations. Apart from the cases of mandatory appointment regulated by Article 242 of the Criminal Procedure Code of Ukraine, in particular, «determination of the amount of material damage, non-property damage, environmental damage caused by a criminal offence», it is almost impossible to prove otherwise by whom, when, and in what amount the damage was caused under the above-mentioned criminal offences.

The analysis of the materials of criminal proceedings on the facts of offences related to the state support of the functioning of the healthcare sector has established that forensic economic examinations were primarily appointed (98, 2 %), forensic handwriting (86 %), technical examination of documents (36.7 %), commodity (46.3 %), computer and technical (38.1 %), telecommunications (43.6 %), phonoscopic (27.9 %), construction and technical (24.7 %), medical (15.8 %), other types (11.3 %).

The main object of study in most classes of the listed forensic examinations are

ISSN 2078-3566 145

documents containing business financial and other information. The objects of forensic medical examination in the criminal offences under study are also documents, not persons. For example, these may be the conclusions of a medical and social expert commission. A typical issue in such cases is the legitimacy of the disability group. When investigating these crimes, it is also advisable to appoint comprehensive examinations, which may include economic, construction, commodity, handwriting, etc. The names of expert specialties, depending on which the name of the appointed examination is specified, and a list of typical questions for each type of forensic examination are set out in the scientific literature and regulations. However, only those questions that are directly necessary for the investigation of a particular criminal proceeding should be asked. Otherwise, the time and cost of conducting examinations will be increased [9, p. 230].

In order for the investigator and the court to be able to fully assess the expert's opinion, they must have general knowledge in the field of forensic examination. In turn, a forensic expert, as a specially knowledgeable person in a particular field, in the process of research, involves a deep analysis of the entire conclusion, based on scientific, technical or other special knowledge. And only he can fully ascertain the correctness and validity of the applied research methods, decide whether all the methods necessary in this case were applied, whether the signs that led to certain conclusions were correctly identified and evaluated. And the use by investigators and the court of procedural and non-procedural forms of using specialised knowledge, such as consulting assistance, questioning of the expert, presence during the examination, etc., will help to correctly assess the expert's opinion and use it as a source of evidence, and the factual data contained therein as evidence [1, p. 66].

The above example from the Verdict of the Oktyabrsky District Court of Poltava demonstrates a case of forensic economic examination with obvious gross violations, which led to the loss of significant evidence. Thus, the expert's opinion of 14 June 2019 No. 118, which is the basis for the prosecution of PERSON\_15, PERSON\_17, PERSON\_16, PERSON\_18 and PERSON\_19, was conducted with a gross violation of the current legislation of Ukraine, namely:

- the status of the forensic examination was illegally changed from additional to primary;
- the introductory part of the expert's opinion does not contain information about the primary forensic examination conducted earlier in this case, dated 27 May 2019, No. 90, the conclusions of which do not confirm the charges against these persons;
- the expert's conclusions are not substantiated, complete, specific, and not subject to ambiguous interpretation;
- the expert did not examine the primary documents on business transactions when conducting the economic examination;
- the conclusion of the expert study dated 14 June 2019 No. 118 was based on a specialist's certificate, which is purely informational and is not proper and admissible evidence in criminal proceedings. Based on the above, the court recognises the expert opinion of 14 June 2019 No. 118 as inadmissible evidence in this criminal proceeding' [3].

In the forensic literature and scientific articles, some scholars combine the functions of an expert and a specialist, which is absolutely unacceptable. We agree that an expert may be involved as a specialist in complex cases to examine the scene, search, take samples, etc. However, his or her main duty is to perform examinations. Forensic examinations are appointed regardless of whether the investigator, prosecutor, or judge has special knowledge when appointing the examination, since the factual data obtained through expert research cannot be reflected in any procedural document other than the expert's opinion, however, without bilateral interaction, it is difficult to achieve success [2, p. 56].

Today, the functions of an expert have been significantly expanded, and now they have the right to provide opinions. However, in criminal proceedings of this category, it is important to involve specialists in the field of handwriting, document examination for document review, and an IT specialist during searches not only to properly seize computer equipment and communication devices, but also to prevent counteraction to the investigation (destruction, damage to information).

The next form of interaction between the investigator and knowledgeable persons is cooperation with employees of state financial control bodies in the form of financial audit, revision (inspection), procurement monitoring and procurement verification.

Financial audit provides companies with an economic picture of the correctness of accounting and reliability of financial statements, the functioning of the internal control system, and can be used as circumstantial evidence in pre-trial investigations. In order to monitor

146 ISSN 2078-3566

procurement in the investigation of crimes related to the illegal use of budget funds in the healthcare sector, the investigator, operative of the Department of Strategic Investigations of the National Police of Ukraine, prosecutor apply to the state financial control body to monitor public procurement to identify violations of the legislation in the field of public procurement, establish discriminatory requirements for participants, identify facts of unfair competition, identify facts of collusion between participants, misuse of budget funds, etc. In some cases, additional evidence of a crime is needed to restore the dynamics of the crime, etc., so there is a need for a procurement audit, which results in an act. The Law of Ukraine «On the Basic Principles of State Financial Control in Ukraine» stipulates that procurement audits are also conducted by the state financial control body, the essence of which is a documentary and factual analysis of compliance with procurement legislation [5, p. 82].

A more significant form of interaction with the state financial control authorities is an audit, which results in an act recording the facts of offences committed by the object of control, which is subsequently used during pre-trial investigations, forensic examinations, etc.

However, it is currently impossible to conduct an unscheduled audit at the initiative of the investigator, as scholars have repeatedly highlighted in their research. Therefore, at the stage of pre-trial investigation, the involvement of experts from the State Audit Service of Ukraine office as a specialist is widely used.

«Thus, the director of the Municipal Non-Profit Enterprise of the Rokytne District Council of Kyiv Region «Rokytne Central District Hospital», being an official, showed improper performance of his official duties due to his negligent attitude to them, contrary to the requirements of clause 3.2 of the Contract and clause 9. 7 of the Charter, he signed four orders that became the basis for the accrual and payment of an excessive surcharge to the director of the Rokytnyansky District Council of Kyiv Oblast's Rokytnyansky Central District Hospital, causing significant damage to the interests of the municipal non-profit enterprise in the amount of UAH 128,975.63, which is one hundred times or more the tax-free minimum income of citizens. The evidence against him includes: a certificate of the Northern Office of the State Audit Service dated 05.10.2022 regarding the unjustified accrual of a surcharge for the provision of medical care to patients with acute respiratory disease COVID-19 to the director of the Rokytnyanska BL in the amount of UAH 186648.52 and the conclusions of forensic experts dated 22.12.2022 №CE-19/111-22/49291-EK and 05.12.2022 №CE-19/111-22/49189-ΠΨ» [4].

And, of course, a consultative form of interaction is used throughout the pre-trial investigation, in particular, on the eve of the appointment of forensic examinations, audits, other investigative (detective) actions, covert investigative (detective) actions, and measures to ensure criminal proceedings.

Conclusions. As a result, it should be noted that during the investigation of criminal proceedings on unlawful facts related to the state support of the healthcare sector, pre-trial investigation officers should use all legal methods and means. The specificity of proving the above criminal offences requires the investigator to use forensically significant information of a specific nature relating to the economic and business activities of medical institutions, which can be provided at a high professional level only by knowledgeable persons in the manner regulated by criminal procedure legislation. Therefore, in criminal proceedings, the following forms of interaction are of particular importance: engaging an expert to conduct forensic examinations (forensic economic, forensic handwriting, commodity, computer, telecommunications, phonoscopic, technical examination of documents, etc.), engaging specialists to conduct procedural actions (investigative (search) actions, covert investigative (search) actions, measures to ensure criminal proceedings), consultations (at all stages of the investigation), accounting and reference forms During the investigation of the above criminal offences, such forms of financial control as audits, procurement monitoring, procurement verification, and financial audit, which are used at different stages of the pre-trial investigation, are of great importance.

## Список використаних джерел

- 1. Бідняк Г. С. Взаємодія слідчого з експертом під час призначення та проведення судових експертиз. *Науковий журнал Академії «Штефан чел Маре»* МВС Республіки Молдова. 2021. № 13. С. 65–74.
- 2. Бідняк Г. С. Висновок експерта як джерело доказів під час розслідування шахрайства. *Криміналістичний вісник*. 2014. № 2. С. 55–59.
- 3. Вирок Октябрського районного суду м. Полтави у справі № 541/1953/19 від 06.09.2021. URL: https://youcontrol.com.ua/catalog/court-document/99403838/.
  - 4. Вирок Рокитнянського районного суду Київської області у справі № 375/380/23 від 12

ISSN 2078-3566 147

- грудня 2023 р. URL: https://reyestr.court.gov.ua/Review/116051310.
- 5. Діденко В. Л. Взаємодія слідчих та оперативних підрозділів з органами державного фінансового контролю під час розслідування кримінальних правопорушень у бюджетній сфері. *Юридичний науковий електронний журнал.* 2022. № 9. С. 721–723. URL: http://www.lsej.org.ua/9 2022/178.pdf.
- 6. Єфімов М. М., Павлова Н. В., Чучко С. В. Методика розслідування шахрайств, пов'язаних із купівлею-продажем товарів через мережу Інтернет: теоретичні та праксеологічні засади : монографія. Дніпро : Дніпроп. держ. ун-т внутр. справ, 2022. 202 с.
- 7. Кримінальний процесуальний кодекс України : Закон України від 13.04.2012. URL : https://zakon.rada.gov.ua/laws/show/4651-17#Text.
- 8. Лук янчиков Є. Д. Форми взаємодії в процесі використання спеціальних знань. *Вісник НТУУ «КПІ». Політологія. Соціологія. Право.* 2009. № 3. С. 71–79. URL : http://socio-journal.kpi.kiev.ua/archive/2009/3/9.pdf.
- 9. Bidniak V. Types of expertise assigned in the investigation of crimes relating to illegal use of budget funds in the field of health care. *Scientific Bulletin of the Dnipropetrovsk State University of Internal Affairs*. 2019. Special Issue № 1. P. 229–232.
- 10. Плетенець В. М. Особливості взаємодії слідчих органів Національної поліції з підрозділами карного розшуку в підвищенні ефективності подолання протидії розслідуванню. Вісник Луганського державного університету внутрішніх справ імені Е.О. Дідоренка. 2022. Вип. 3 (99). С. 272–283.

Submitted 02.12.2024 Admitted 10.12.2024

## References

- 1. Bidniak, H. S. (2021) Vzaiemodiia slidchoho z ekspertom pid chas pryznachennia ta provedennia sudovykh ekspertyz [Interaction of the investigator with the expert during the appointment and conduct of forensic examinations]. *Naukovyi zhurnal Akademii «Shtefan chel Mare» MVS Respubliky Moldova.* № 13, pp. 65–74. [in Ukr.].
- 2. Bidniak, H. S. (2014) Vysnovok eksperta yak dzherelo dokaziv pid chas rozsliduvannia shakhraistva [Expert's conclusion as a source of evidence during the investigation of fraud]. *Kryminalistychnyi visnyk.* № 2, pp. 55–59. [in Ukr.].
- 3. Vyrok Oktiabrskoho raionnoho sudu m. Poltavy u spravi № 541/1953/19 vid 06.09.2021 [Verdict of the Oktyabrsky District Court of Poltava in case No. 541/1953/19 dated 09/06/2021]. URL: https://youcontrol.com.ua/catalog/court-document/99403838/. [in Ukr.].
- 4. Vyrok Rokytnianskoho raionnoho sudu Kyivskoi oblasti u spravi № 375/380/23 vid 12 hrudnia 2023 r. [Verdict of the Rokytnyansky District Court of Kyiv Region in case No. 375/380/23 dated December 12, 2023]. URL: https://reyestr.court.gov.ua/Review/116051310. [in Ukr.].
- 5. Didenko, V. L. (2022) Vzaiemodiia slidchykh ta operatyvnykh pidrozdiliv z orhanamy derzhavnoho finansovoho kontroliu pid chas rozsliduvannia kryminalnykh pravoporushen u biudzhetnii sferi [Interaction of investigative and operational units with state financial control bodies during the investigation of criminal offenses in the budgetary sphere]. *Yurydychnyi naukovyi elektronnyi zhurnal*. № 9, pp. 721–723. URL: http://www.lsej.org.ua/9\_2022/178.pdf. [in Ukr.].
- 6. Iefimov, M. M., Pavlova, N. V., Chuchko, S. V. (2022) Metodyka rozsliduvannia shakhraistv, poviazanykh iz kupivleiu-prodazhem tovariv cherez merezhu Internet: teoretychni ta prakseolohichni zasady [Methodology of investigating fraud related to the purchase and sale of goods via the Internet: theoretical and praxeological principles]: monohrafiia. Dnipro: Dniprop. derzh. un-t vnutr. sprav. 202 p. [in Ukr.]
- 7. Kryminalnyi protsesualnyi kodeks Ukrainy [Criminal Procedure Code of Ukraine]: Zakon Ukrainy vid 13.04.2012. URL: https://zakon.rada.gov.ua/laws/show/4651-17#Text. [in Ukr.].
- 8. Lukianchykov, Ye. D. (2009) Formy vzaiemodii v protsesi vykorystannia spetsialnykh znan [Forms of interaction in the process of using special knowledge]. *Visnyk NTUU «KPI». Politolohiia. Sotsiolohiia. Pravo.* № 3, pp. 71–79. URL: http://socio-journal.kpi.kiev.ua/archive/2009/3/9.pdf. [in Ukr.].
- 9. Bidniak, V. (2019) Types of expertise assigned in the investigation of crimes relating to illegal use of budget funds in the field of health care. *Scientific Bulletin of the Dnipropetrovsk State University of Internal Affairs*. Special Issue № 1, pp. 229–232.
- 10. Pletenets, V. M. (2022) Osoblyvosti vzaiemodii slidchykh orhaniv Natsionalnoi politsii z pidrozdilamy karnoho rozshuku v pidvyshchenni efektyvnosti podolannia protydii rozsliduvanniu [Peculiarities of the interaction of investigative bodies of the National Police with criminal investigation units in increasing the effectiveness of overcoming opposition to the investigation]. *Visnyk Luhanskoho derzhavnoho universytetu vnutrishnikh sprav imeni E.O. Didorenka*. Vyp. 3 (99), pp. 272–283. [in Ukr.].

## ABSTRACT

The article examines the peculiarities of interaction between authorised persons and forensic experts, specialists of the State Financial Control Authority, and specialists in various fields of knowledge during pre-trial investigation of illegal activities in the healthcare sector. Based on the analysis of the regulatory framework and scientific achievements of leading scholars, the author identifies the forms of

148 ISSN 2078-3566

interaction which include: 1) engagement of a specialist to conduct investigative (detective) actions, covert investigative (detective) actions, and measures to ensure criminal proceedings, 2) appointment of forensic examinations (forensic economic forensic, handwriting, commodity, computer and technical, telecommunication, phonoscopic, technical examination of documents, etc.), 3) interaction with the state financial control authorities (financial audit, audits (inspections), procurement monitoring and procurement verification), 4) consultations (written and oral), etc.

**Keywords:** forms of interaction, investigator, expert, specialist, auditor, forensic examinations, pre-trial investigation, criminal proceedings, healthcare sector.

UDC 343.1

DOI: 10.31733/2078-3566-2024-5-23



Oleksii BOIKO<sup>©</sup> Ph.D. in Law



Volodymyr YEFIMOV<sup>©</sup> Ph.D. in Law, Associate Professor

(Dnipro State University of Internal Affairs, Dnipro, Ukraine)

## PECULIARITIES OF INTERACTION OF INVESTIGATORS OF THE NATIONAL POLICE OF UKRAINE WITH THE ARMED FORCES OF UKRAINE DURING THE TRANSFERRING ITEMS AND DOCUMENTS DISCOVERED ON THE BATTLEFIELD OR IN DEOCCUPIED TERRITORIES

Олексій Бойко, Володимир Єфімов. ОСОБЛИВОСТІ ВЗАЄМОДІЇ СЛІДЧИХ НАЦІОНАЛЬНОЇ ПОЛІЦІЇ УКРАЇНИ ЗІ ЗБРОЙНИМИ СИЛАМИ УКРАЇНИ ПРИ ПЕРЕДАЧІ РЕЧЕЙ ТА ДОКУМЕНТІВ, ВИЯВЛЕНИХ НА ПОЛІ БОЮ ЧИ ДЕОКУПОВАНИХ ТЕРИТОРІЯХ. Висвітлено особливості взаємодії слідчих Національної поліції України зі Збройними Силами України при передачі речей та документів, виявлених на полі бою чи деокупованих територіях.

Акцентовано на тому, що доцільно здійснювати збирання військовослужбовцями усіх речей і документів, що ними виявляються в ході бойових дій, та їх передачу різноманітними способами через довірених осіб слідчому, в якого під територіальною юрисдикцією знаходиться місцевість. Вказаним способом інколи фактично знищується доказова сила виявлених матеріальних слідів злочину, оскільки, по-перше, предмети з різних ділянок фронту потрапляють до одного пакету, і встановити час та точне місце їх виявлення не видається за можливе, а по-друге, особи, які здійснюють доставку пакетів до слідчого, також не володіють інформацією щодо обставин та точного місця вилучення та не можуть дати жодних коментарів із приводу наданих потенційних речових доказів.

Доведено, що передача представниками Збройних Сил України слідчому Національної поліції України інформації при виявленні та фіксації вчинення воєнного злочину може здійснюватися: на окупованій території, на території, де ведуться активні бойові дії, та на деокупованій території.

На окупованій території та території, де ведуться активні бойові дії, така інформація може бути зафіксована на відео за допомогою БпЛА.

Офісом Генерального прокурора України та Національною поліцією України для практичних працівників розроблено пам'ятки та рекомендації щодо організаційних засад забезпечення діяльності слідчо-оперативних груп Національної поліції України з документування

ISSN 2078-3566 149

<sup>©</sup> O. Boiko, 2024

ORCID iD: https://orcid.org/0000-0002-2316-4871 oleksii.boiko@dduvs.edu.ua

<sup>©</sup> V. Yefimov, 2024

ORCID iD: https://orcid.org/0000-0002-7094-3990 volodymyr.yefimov@dduvs.edu.ua