
Viktor M. Shevchuk

Doctor of Legal Sciences, Professor

Professor of Criminalistics Yaroslav Mudryi

National Law University

*leading researcher Academician Stashis Scientific
Research*

Institute for the Study of Crime Problems

Kharkiv, Ukraine

ORCID ID: 0000-0001-8058-3071

TASKS OF CRIMINALISTICS IN THE CONDITIONS OF MILITARY THREATS AND DIGITAL TECHNOLOGIES

Abstract. *The article is devoted to the study of topical problems of new tasks of criminalistics in modern conditions of war and digital technologies. The challenges, tasks and trends of the modern development of criminalistic science in today's realities are identified and analyzed, and promising areas of its scientific research are outlined. The emergence and formation of new areas of criminalistics due to scientific and technological progress, the introduction of new technologies, the conditions of war, digitalization and the emergence of new tasks associated with the need to identify specific traces and collect evidence (digital, genomic, nuclear, etc.) are substantiated. It is noted that it is important to take into account the current tasks and trends in the development of criminalistics associated with the formation of certain branches (directions): medical, digital and nuclear criminalistics. Under the conditions of the war in Ukraine, the necessity and relevance of the formation of a new scientific forensic direction of military criminalistics is substantiated. A system of military criminalistics is proposed, its tasks, object and subject are defined. The most perspective directions of researches of this new direction of scientific developments in criminalistics are outlined. The problems of formation and development of digital criminalistics and its role in the investigation of war crimes in Ukraine are analyzed. The most promising areas of criminalistic research in this field of knowledge are highlighted. The author's vision of this issue is proposed, aimed at improving investigative (detective) activities in the field of using tools and means of digital criminalistics in the investigation of war crimes. It is substantiated that further prospects for the formation and development of criminalistics provide for the need to reboot and modernize the cur-*

rent paradigm, in particular, we are talking about revising, modernizing and significantly updating the modern understanding of the subject of criminalistics. The problems of the formation and development of European criminalistics, the activation of the processes of integration of criminalistic knowledge into a single European criminalistic space are considered and substantiated.

Keywords: innovations in criminalistic, tasks of criminalistics, military criminalistics, digital criminalistics, war crimes, digital technologies, collection of evidence of war crimes, criminalistic knowledge.

Introduction

Today, the use of digital information and modern information technologies is not just the latest technological trend or a fashion fad – it is actually a new digital reality based on social innovations and advanced digitalization technologies¹. Obviously, in modern conditions, digitalization processes act as an important strategic direction for the prospective development of the advanced states of Europe, the world, including Ukraine, which has chosen the European vector of development. Under such conditions, digitalization has become not only a modern trend in the development of society, but also becomes an important factor in the economic, social, political and international growth of the state.

Modern processes of enhancing the digitalization of all spheres of state activity, in turn, necessitate the improvement of the system of law enforcement agencies and the prosecutor's office, and the

judiciary. There is a transition of the existing traditional system to a new reality – digital, in which digital information is an integral attribute, both in the work of criminal justice bodies, on the one hand, and modern criminal activity, on the other². This, in turn, determines current trends and prospects for the development of legal science, including forensic science, which is at the forefront of the fight against crime. In Ukraine, criminalistics has chosen the European vector of development. European approaches are also manifested in the application of standards of proof in the course of criminal proceedings³.

It is obvious that today's digital reality is now closely connected with the emergence of new forms of crime – cybercrime, information fraud, cyber terrorism.

¹ Tymoshenko, Y. P., Kozachenko, O. I., Kyslenko, D. P., Horodetska, M. S., Chubata, M. V., & Barhan, S. S. (2022). Latest technologies in criminal investigation (testing of foreign practices in Ukraine). *Amazonia Investiga*, 11(51), 149–160. Retrieved from <https://doi.org/10.34069/AI/2022.51.03.14>.

² Shevchuk, V. M., Konovalova, V. O., & Sokolenko, M. O. (2022, December). Digital criminalistics: formation and role in the fight against crime in wartime conditions in Ukraine. *The use of digital information in the investigation of criminal offenses: materials of the international science and practice round table*. Scientific Research Institute crime problems named after Acad. V. V. Stashis. Kharkiv: Pravo, 97–102.

³ Shepitko, V. Yu. (2022). The formation of the doctrine of criminalistics and forensic examination in Ukraine is the way to a unified European forensic space. *Law of Ukraine*, 2, 83.

ism, a large number of cyber attacks on enterprises and government databases¹. Of course, such threats require the development of the latest approaches to combating crime, modernizing and updating the system of criminal justice bodies to modern conditions and global threats of the XXI century. This leads to the intensification of the use and dissemination of digital technologies in investigative, judicial and expert activities.

It is assumed that among the new challenges and threats, the full-scale invasion of the Russian occupation forces into the territory of Ukraine on February 24, 2022 and the military aggression of the Russian Federation became unprecedented and shocking. Such a difficult situation for our state made it necessary to introduce martial law in Ukraine, which significantly affected all spheres of our life. The Russian military is committing mass murders of civilians on the territory of Ukraine, the destruction of infrastructure facilities and dwellings of citizens, the rape of women and children, and looting. The crimes committed by the military of the Russian Federation on the territory of Ukraine are extremely large-scale, and their fixation, documentation and investigation involves the study of a significant amount of events, the careful collection of a large amount of evidence² and the conduct of a huge

amount of criminalistic research and forensic examinations³.

In such conditions, challenges and threats today necessitate the formation and implementation of innovative approaches in criminalistic support for combating war crimes in Ukraine, taking into account the processes of digitalization and Europeanization⁴. Of course, such challenges today determine the current trends in the development of criminalistics and its tasks that require special research.

In the context of full-scale military aggression by the Russian Federation on the territory of Ukraine, taking into account the modern tasks of adapting criminalistic knowledge to the conditions of martial law and reforming domestic legislation to the international standards of the European Union. Today the problems of adapting and modernizing the tasks of criminalistics to the requirements of modern practice and solving all problems are quite relevant facing criminal-

nal of the National Academy of Legal Sciences of Ukraine, 29(2). 313–328.

³ Konovalova, V. O., & Shevchuk, V. M. (2022, December). Application of digital technologies in criminalistics in the conditions of war. *Digital transformation of criminal proceedings under martial law: materials of the All-Ukrainian round table. National Law University named after Yaroslav the Wise; Scientific Research Institute of the Academy of Sciences named after academician V. V. Stashis NPR of Ukraine*. Kharkiv, 49–53.

⁴ Shevchuk, V. M. (2023, May). Development trends in criminalistics in the era of digitalization. *Modern knowledge: research and discoveries: I International Scientific and Practical Conference*, 198–219.

¹ Zhuravel, V. A. (2021). Crime mechanism as a category of criminalistics. *Yearbook of Ukrainian law*, 13, 390–404.

² Zhuravel, V. A., & Kovalenko A. V. (2022). Examination of evidence in criminal proceedings as a component of the proof process. *Jour-*

istic science and criminal justice authorities. In modern conditions, criminalistics is called upon to develop the latest tools, techniques and methods aimed at countering crimes related to the military aggression of the RF against Ukraine and other criminal manifestations in war conditions.

1. New tasks of criminalistics and challenges for the criminal justice authorities in the context of full-scale military aggression of the Russian Federation

The main task of criminalistics is the development and application of tools, techniques and methods that allow you to collect, investigate, use evidence in the conditions of war and global threats of our time. The transformation of crime in Ukraine during the war had a significant impact on changing the priorities of the tasks of criminalistics and the features of the formation and application of criminalistic knowledge in martial law¹. In such conditions, the issue of increasing the role of criminalistics in the formation of the evidence base for the investigation of war crimes committed by the Russian military in Ukraine is acute.

In today's realities, it is seen that the practice of using criminalistic knowledge to collect evidence during the war is quite relevant and important. Today,

in the conditions of martial law, the tendency to strengthen the practical orientation of forensic developments, innovative products², their pragmatic orientation towards solving practical problems is of particular importance³. It is no coincidence that for another time Hans Gross called the «practical» goal as the unchanging goal of criminalistic science⁴. Criminalistics, as an applied science, integrating modern achievements of science and technology, now directs its scientific potential to create an effective system of criminalistic tools, techniques and technologies, the use of which is aimed at solving complex practical problems, among which the possibilities of using criminalistic knowledge in war conditions are of particular importance⁵. Therefore, criminalistics and each of its chapters face tasks related to ensuring the activities of law enforce-

² Shevchuk, V. (2022). Modern criminalistics in the conditions of war and global challenges XXI century: problems today and development prospects. = Współczesna kryminalistyka w warunkach wojny i globalnych wyzwań XXI wieku: dzisiejsze problemy i perspektywy rozwoju. *Problemy Współczesnej kryminalistyki. Current problems of forensic science*, XXVI. Warszawa, 359–374.

³ Malewski, H., Kurapka, V. E., & Tamelé, I. (2021). Motivation and expectations of students – an important factor in the implementation of the new bachelor's degree program. *Law and Criminalistics. The Criminalist of the First Printing*, 21.

⁴ Gross, H. (1902). *Gesammelte Kriminalistische Aufsätze*. Leipzig: F. C. W. Vogel. Bd. I.

⁵ Shepitko, V. (2017). Targeting criminalistic knowledge and striving for European standards in combating crime. *Theory and practice of forensic examination and criminalistics*, 17, 5–12.

¹ Matulienė, S., Shevchuk, V., & Baltrūnienė, J. (2023). Artificial Intelligence in Law Enforcement and Justice Bodies: Domestic and European Experience. *Theory and Practice of Forensic Science and Criminalistics*, 29(4), 12–46.

ment agencies and other special subjects of such counteraction with effective criminalistic recommendations for combating crime under martial law, in particular in identifying, documenting and investigating crimes related to military aggression. RF vs Ukraine.

Today, the tasks of criminalistics, depending on the theoretical-cognitive and applied problems, can be divided into two levels: a) tasks aimed at improving the theory of criminalistics; b) tasks aimed at improving law enforcement practice, that is, we are talking about both scientific and practical developments for the development of the theory of criminalistics, and about solving problems for law enforcement practice. It seems that these and other important tasks can be solved comprehensively and systematically, in particular, by improving the criminal, criminal procedural legislation and developing theoretical and methodological foundations and scientific and practical recommendations for investigating this category of criminal offenses.

In the current conditions of war and the realization of Ukraine's aspirations to become a full member of the European Union, certain changes, modernization and a kind of reloading of criminalistics are taking place, primarily associated with the emergence of new challenges to society and the need to solve priority tasks in conditions of active hostilities on the territory of Ukraine, the formation of criminalistic knowledge in accordance with the needs

of practice in the realities of wartime and global upheavals. Changing the paradigm of forensic science affects the system of knowledge classified as criminalistic.

Criminalistics, as an applied science, integrating modern achievements of science and technology, now directs its scientific potential to create an effective system of criminalistic tools, techniques and technologies, the use of which is aimed at solving complex practical problems, among which the possibilities of using forensic knowledge in combating crime are of particular importance in the realities of the military present and the approach to a single criminalistic European space¹. Ukraine's integration into the world and European community requires our state to adapt national legislation to international standards and obligations². This is especially true for criminology and the criminal process, both in the field of combating crime and in the field of protecting important constitutional rights, freedoms and interests of citizens, taking into account the current realities of the development of Ukrainian society.

¹ Zhuravel, V. A., & Shepitko, V. Yu. (2021). Development of criminalistics and forensic examination in Ukraine: approach to a single European space. *Legal science of Ukraine: current state, challenges and prospects for development*. Kharkiv: Pravo, 631–669.

² Vdovitchenko, V. (2021, October). Military justice of Ukraine: current state and development prospects. *Activities of military justice in conditions of armed conflict. Experience of the Ukrainian prosecutor's office: materials of the International science-practice conference*. Kyiv-Odesa: Phoenix, 19–26.

During martial law, law enforcement agencies faced new challenges, so the legislator made appropriate changes to the Code of Criminal Procedure and the Criminal Code of Ukraine¹. The creation of a system of military justice is very relevant today, in particular, this is the issue of the formation of the military police, military prosecutor's office and military courts, taking into account the best foreign experience, European and international standards for combating crime. The creation of military justice bodies in the realities of the military present is a necessary step to ensure high-quality and effective prevention, counteraction, detection, fixation, disclosure and investigation of war crimes committed by the Russian military on the territory of Ukraine.

In military realities, today there is also a change in the vector of forensic research in Ukraine, bringing it closer to the common European space². Therefore, for Ukraine, which has determined the course of accession to the EU, one of the priority areas of activity is the task of bringing the legislation in line with European standards, including in the field of combating crime, the implementation of legal proceedings, the formation and

development of a system of military justice bodies³.

An innovative direction in the development of criminalistics is the development and implementation in practice of criminalistic support for combating modern crime, including documenting and investigating war crimes in Ukraine. This requires the intensification of the development and implementation of advanced technologies based on the use of modern criminalistic knowledge, observing the standards of proof in criminal proceedings and the widespread use of digital technologies and artificial intelligence⁴. In this case, we can talk about the formation of new scientific directions in criminalistics (medical, nuclear, aerospace, genotiposcopy, digital, military criminalistics), the emergence of which is due to modern trends and tasks in the development of science.

In the conditions of war and modern European integration processes, criminalistics is being rebooted, associated primarily with the emergence of new challenges to the criminal justice system and the need to solve priority tasks in the

¹ Changes in criminal proceedings (2022, April). Retrieved from <https://pravo.ua/zminy-u-kryminalnomu-provadhenni-vid-14-kvitnia-2022-roku/>

² Shepitko, V. (2021). Theoretical and methodological model of criminalistics and its new directions. *Theory and practice of forensic examination and criminalistics*, 25(3), 11.

³ Bogutsky, P. P. (2021, October). Military justice as a legal system: international standards and national peculiarities. *Activity of military justice in conditions of armed conflict. Experience of the Ukrainian prosecutor's office: materials of the International science-practice conference*. Kyiv-Odesa: Phoenix, 12–18.

⁴ Shevchuk, V. M. (2023, January). Development of digital criminalistics in the conditions of war in Ukraine. *Diversity and inclusion in scientific area. II International Scientific and Practical Conference*. Warsaw, Poland: Ceac Polonia, SPC «InterConf», 442–450.

conditions of active hostilities on the territory of Ukraine, the formation of criminalistic knowledge in accordance with the needs of practice. Under such conditions criminalistics is called upon to develop the latest means, techniques and methods aimed at countering criminal offenses related to the military aggression of the Russian Federation against Ukraine and other crimes in war conditions. A separate area in criminalistics should be the development of a system of criminalistic investigation techniques¹, the activation of the development of technical and criminalistic support, the use of special knowledge², the protection of information sources and the problems of information security³.

So, in modern conditions of war, there is a reboot of criminalistics, associated primarily with the need to solve new problems that confront criminalistics. It is assumed that such tasks can be: a) strategic; b) tactical. In particular, strategic tasks are related to the

development of *Criminalistic Strategy*⁴ and the formation of strategic scientific areas in criminalistics (digital, military, nuclear criminalistics), and tactical tasks are aimed at solving problems in criminalistic technology, tactics, investigative techniques and the formation of innovative approaches to improve investigative, judicial activities in the face of military threats and digital technologies

2. Problems of formation of military criminalistics and its role in modern conditions

Today, in the conditions of martial law, criminalistics is called upon to develop innovative criminalistic products, means, techniques and methods aimed at countering crime associated with the military aggression of the Russian Federation against Ukraine and solving other important tasks. Moreover, the system of pre-trial investigation bodies and criminal justice faces new challenges related to the need for quick, comprehensive and high-quality documentation, collection of evidence of massive criminal violations of international humanitarian law committed by the Russian occupation forces. In fact, it can be stated that it is today that a new scientific criminalistic direction

¹ Konovalova, V. O., & Shevchuk, V. M. (2021, February). Prospective directions of research of innovations of separate criminalistic methodics. *Scientific practice: modern and classical research methods*: Collection of scientific papers «ΔΟΓΟΣ» (Vol. 1), Boston-Vinnytsia: European Scientific Platform, 81–85.

² Shevchuk, V. M. (2020). Criminalistics : traditions, innovations, perspectives: a selection of sciences. pr. In N. A. Chmutova (Ed.). Kharkiv: Pravo, 108–122.

³ Shevchuk, V. (2020, April). Criminalistic innovation: modern problems of formation and prospects for research. *Perspectives of world science and education*: abstracts of VIII International Scientific and Practical Conference. CPN Publishing Group. Osaka, Japan, 158–168.

⁴ Bernaz, V. D., & Bernaz, P. V. (2008). Criminalistic strategy as a scientific category. *Actual problems of the state and law*, 44, 28–32; Textbook of criminalistics. Vol. 1: General theory (2016). H. Malevski, & V. Shepitko. Kharkiv: Apostille Publishing House, 286–287.

is being formed – “*Military Criminalistics*”¹.

It should be noted that in the history of criminalistics there have been attempts to form the idea of “military field criminalistics” (for example, G. M. Grigoryan)², “military applied criminalistics”, “military criminalistics”³, etc. From our point of view, the proposed terms somewhat narrow understanding of the subject, system and tasks of military criminalistics. So, for example, the term “field criminalistics” itself is debatable, since it is rather conventionally understood as technical and forensic tools and methods of working with evidence that are used or can be used not in the investigator’s office or in the expert’s laboratory, but directly at the scene the time of its inspection, during the production of other investigative actions or research expert operations at this place⁴.

¹ Shevchuk, V. (2022). The role of criminalistics in improving the efficiency of the investigation of war crimes committed by the military of the RF in Ukraine. *Scientific Collection «InterConf»*, 122, 187–195. Retrieved from <https://archive.interconf.center/index.php/conference-proceeding/article/view/1208>.

² Grigoryan, G. M. (2021). International legal and organizational foundations for the investigation of war crimes committed by the warring parties to an armed conflict (Candidate thesis).

³ Shevchuk, V. M. (2023, January). Criminalistic didactics in modern conditions of war and digital technologies. *Scientific goals and purposes in XXI century: IV International Scientific Conference*. Seattle, USA: SPC «InterConf», 121–140.

⁴ Shevchuk, V. (2020, July). Actual problems of a separate criminalistic methodics. *Theoretical and empirical scientific research: concept and trends*: Collection of scientific papers

As you can see, these questions are far from exhausting the problems of military criminalistics. Of considerable interest both in scientific and practical terms are the analysis and solution of other problems that require research in this specific field of knowledge.

In our opinion, the content of the scientific concept of military forensics should be made up of ideas and theoretical provisions about the object of research, the knowledge system, the content of its individual elements, the place in the system of scientific knowledge, the significance for the theory and practice of investigative work, and the tasks of further scientific research. The object of study of military criminalistics is the patterns of collection, research and use of evidence, the formation of criminalistic support for the investigation of war crimes and military criminal offenses committed in war, in areas of military operations, military operations and military aggression.

It is assumed that the *object of military criminalistics* to a certain extent predetermines its system, which contains scientifically substantiated and proven in practice forensic provisions and recommendations for organizing the detection, documentation and investigation of war crimes and criminal offenses committed in areas of active hostilities or weapons. Also, the provisions of this system de-

«ΛΟΓΟΣ» International Scientific and Practical Conference (Vol. 4). Oxford, United Kingdom: Oxford Sciences Ltd. & European Scientific Platform, 21–26.

termine the development and use of theoretical and methodological foundations, the choice and application of means, methods and techniques of forensic technology, tactics and methods of investigation, taking into account the specific conditions of activity – in conditions of martial law, war and active hostilities in a certain territory of the state. The main *tasks of military criminalistics* are the development, formation and application of a system of means, methods, techniques and measures of forensic support for combating the commission of war crimes and military criminal offenses. Since military criminalistics is complex in nature, it should cover the theoretical and methodological, technical, tactical and methodological and criminalistic areas of research¹.

The *theoretical and methodological foundations of military criminalistics* contain general scientific issues related to the development of the concept, subject, system and tasks of military forensics, its place in the system of forensic science. Important areas of scientific research can be the development of such scientific problems as the methodology of military criminalistics, the course system of military criminalistics, innovations in forensic didactics in the teaching of military criminalistics, etc. In this case, we can talk about military criminalistics as a new scientific direction in

criminalistic doctrine, which has significant prospects and requires further research.

In the direction of the *technical and criminalistic support of military criminalistics*, it is necessary to update scientific developments and research on the creation and implementation of innovative criminalistic products aimed at optimizing the fight against crime in the military sphere, documenting and investigating identified crimes related to the military aggression of the Russian Federation against Ukraine². Among such innovative products are the latest (newly formed or adapted to the tasks and needs of combating war crimes and other criminal detections in war conditions) technical and criminalistic tools, modern information technologies, electronic knowledge bases, methods for recording, analyzing, evaluating and collecting evidence information. In addition, for the needs of military forensics, modern identification biometric systems can be used based on human characteristics (fingerprints, appearance signs, iris pattern, DNA, etc.).

Relevant is the use of the capabilities of unmanned aerial vehicles, surveillance and video control systems, electronic control over the movement of persons in space and air, identification systems for recognizing faces behind faces, etc. It is also necessary to intensify work on the use of artificial intelli-

¹ Shevchuk, V. (2022). Current Issues of Criminalistics in Context of War and Global Threats. *Theory and Practice of Forensic Science and Criminalistics*, 3(28), 11–27. DOI: 10.32353/khrife.3.2022.02.

² Shepitko, V. Yu., Konovalova V. O., Shevchuk V. M. et. al. (2021). Scientific and technical support of investigative activities in the context of an adversarial criminal procedure. *Issues of Crime Prevention*, 1, 42, 92–102.

gence to ensure the types of activities under consideration and solve practical problems both in the field of law enforcement¹ and in the fight against crime in war conditions.

In the *tactical and criminalistic support of military forensics*, promising areas of research should be the development of tactical foundations for conducting procedural actions and forensic recommendations for their conduct in war conditions. They may be related to the specifics of the tactics of conducting individual investigative (search) and covert investigative (search) actions under martial law or military operations². This situation necessitates the development of new tactics, revision of the possibilities of tactical combinations and tactical operations, algorithms of investigative (detective) actions, etc. It is important to develop separate tactics for carrying out actions in which the participants (suspects, witnesses, victims, etc.) are persons from temporarily occupied territories or from areas of active hostilities, as well as prisoners of war³.

Innovative developments in this area of criminalistic science should be aimed

at creating *methodics for investigating* new types of criminal offenses, tactical operations, algorithms for investigative (detective) actions, checking standard investigative versions, developing forensic characteristics of criminal offenses⁴, etc. In addition, scientific studies of methods for investigating crimes against the foundations of the national security of Ukraine are becoming relevant; war crimes committed by the military of the Russian Federation in Ukraine; crimes against peace, human security and international law and order; crimes related to the illegal use of humanitarian aid, charitable donations or gratuitous aid, illegal crossing of the state border of Ukraine⁵, etc.

The spread of information computer technologies contributes to the further development of algorithmization of the pre-trial investigation process and ensuring the efficiency and effectiveness of the trial⁶. These issues should be taken into account when developing programs, academic disciplines and improving the methodology of teaching criminalistics,

¹ Baltrūnienė, J. (2022). Dirbtinis intelektas ir duomenų apsauga kriminalistikos plėtros kontekste. *Kriminalistikos teorijos plėtra ir teismo ekspertologijos ateitis*. In V. E. Kurapkai (Ed.). Vilnius, 203–205.

² Shevchuk, V. M. (2023). Problems of the formation of military criminalistics and its role in modern conditions. *Military offences and war crimes: background, theory and practice*. Riga, Latvia: «Baltija Publishing».

³ Chornous, Y. M. (2017). Criminalistic support of crime investigation. Vinnytsia, 39–58.

⁴ Konovalova, V. O., & Shevchuk, V. M. (2021). Prospective directions of research of innovations of separate criminalistic methodics. *Scientific practice: modern and classical research methods: «ΛΟΓΟΣ»*. Boston; Vinnitsa, 81–85.

⁵ Orlovskiy, R., Us, O., & Shevchuk, V. (2022). Committing a Criminal Offence by an Organized Criminal Group. *Pakistan Journal of Criminology*, 14, 2, 33–46.

⁶ Shevchuk, V., Vapniarchuk, V., Borysenko, I., Zatenatskyi, D., & Semenogov, V. (2022). Criminalistic methodics of crime investigation: Current problems and promising research areas. *Revista Juridica Portucalense*, 32, 320–341.

forming criminalistic didactics in modern conditions.

3. The role of digital criminalistics in the investigation of war crimes, genocide and crimes against humanity in Ukraine

Today, in the realities of military and global threats, all practitioners in the field of international criminal justice must improve their technical understanding of the latest digital technologies and must cultivate a deeper understanding of the application of how social networks, geolocation, mobile conversations, computer information and other digital traces and communications are used in war zones¹. Given the military aggression by the occupying Russian troops on the territory of Ukraine and the commission of massacres, violence, looting, today the problem of collecting evidence of these crimes is acute. This requires the activation and dissemination of the use of digital technologies in detecting, documenting and investigating war crimes, crimes against humanity and genocide².

For our study, digital sources are of particular importance, since they are associated with digital information and

digital traces. It seems that in the modern world, almost all human activity, including criminals, is accompanied by a kind of “trace pattern”, among which digital traces acquire a special place as an important source of forensically significant information. It is digital, and not electronic traces that today form the basis of the evidence base in the investigation of criminal offenses. In digital traces, despite the constantly changing form of information storage, one thing remains unchanged – this is the digital encoding of this information, which has become quite widely used, replacing the analog signal³. It is in view of these arguments that today it is worth talking about the digital traces that remain in the virtual space.

Today, the lack of a clear understanding of the nature and characteristics of digital traces entails either a complete loss or depreciation of the evidence base in relation to the criminal offenses under investigation. That is why, in our opinion, it is necessary now to develop the concept of digital traces of the methods of their acquisition, research and analysis, both in an individual aspect and as part of a complex trace. In this regard, it should be noted that the digital footprint

¹ Freeman, L. (2018). Digital Evidence and War Crimes Prosecutions: The Impact of Digital Technologies on International Criminal Investigations and Trials. *Fordham International Law Journal*, 41(2), 284–336.

² Dufenyuk, O. M. (2022). Investigation of war crimes in Ukraine: challenges, standards, innovations. *Baltic Journal of Legal and Social Sciences*, 1, 46–56.

³ Baltrūnienė, J., & Shevchuk, V. (2022, December). Artificial Intelligence Technologies in Law Enforcement and Justice: Ukrainian and European experience. *Digital transformation of criminal proceedings under martial law: materials of the All-Ukrainian round table*. National Law University named after Yaroslav the Wise; Scientific Research Institute of the Academy of Sciences named after academician V. V. Stashis NPR of Ukraine. Kharkiv, 135–140.

has a certain system of features and properties, among which the impossibility of perceiving such a trace directly with the senses, but only with the help of special devices and programs, i.e. working with them requires the use of special knowledge that requires new non-traditional methods, methods and procedures for their identification, fixation, research and evaluation as evidence in the future. The success of the disclosure and investigation of such criminal activity will be possible only with the integration of forensic and special knowledge in the field of IT technologies, programming and training of the investigator and the relevant specialist who will be involved in the investigation and the process of collecting digital information.

In turn, digital evidence requires the latest approaches to their collection, storage, use and research in proving in criminal proceedings. Noteworthy are the developments of Ukrainian scientists regarding the methods of investigating criminal offenses committed in cyberspace, constructing their criminalistic characteristics, determining the algorithm for their investigation, as well as the specifics of using special knowledge and conducting forensic examinations in the investigation of this category of criminal offenses¹. In criminalistics, “digital evidence” is understood as factual data presented in digital (discrete) form and

recorded on any type of media, which become accessible to human perception after computer processing and on the basis of which the investigator, prosecutor, judge and court establish the presence or absence of facts and circumstances relevant to criminal proceedings and subject to proof².

In such circumstances, now we can talk about the intensification of trends in the formation and application of a new scientific direction – *Digital Criminalistics*³. Some scholars point out that digital forensics is a separate area of forensic sciences, which is a system of scientific methods for examining digital evidence in order to facilitate the detection and investigation of criminal offenses⁴. Others note that digital criminalistics is related to the process of collecting, receiving, storing, analyzing and presenting digital information in order to obtain operational-search information, evidentiary information and to investigate and prosecute various types of criminal of-

² Tsekhan, D. M. (2013). Digital evidence: concepts, features and place in the system of proof. *Scientific Bulletin of the International Humanitarian University. Series: Jurisprudence*, 5, 259.

³ Latysh, K. (2022). Digital criminalistics in the period of war in Ukraine: possibilities of using special knowledge in the field of information technologies. *Kriminalistika ir teismo ekspertologija: mokslas, studijos, praktika*, 18, 31–37.

⁴ Stepanyuk, R. L., & Perlin, S. I. (2022). Digital criminalistics and improvement of the system of forensic technology in Ukraine. *Herald of the Luhansk State. internal university affairs named after E. O. Didorenko*, 3(99), 283–294.

¹ Shepitko, V. (2021). Theoretical and methodological model of criminalistics and its new directions. *Theory and practice of forensic examination and criminalistics*, 25(3), 16.

fenses¹. Therefore, digital criminalistics can be a strategic direction for the development of criminalistics².

Given the above, in our opinion, the subject of digital forensics is the patterns of detection, fixation, preliminary research, the use of computer information, digital traces and means of processing them in order to solve the problems of identifying, disclosing, investigating and preventing criminal offenses, as well as developing patterns based on this knowledge. technical means, techniques, methodological recommendations aimed at optimizing activities to counter criminal offenses in the digital space. So, *digital criminalistics* is a field of forensics that studies the patterns of occurrence and use of digital traces and the development of technical means, techniques and methods for identifying, fixing, extracting and studying digital information (evidence) and means of processing it with the aim of disclosing, based on the knowledge of these patterns. investigation and prevention of criminal offenses³.

¹ Kolodina, A. S., & Fedorova, T. S. (2022). Digital criminalistics : problems of theory and practice. *Kyiv Journal of Law*, 1, 176–180.

² Konovalova, V. O., & Shevchuk, V. M. (2023, January). Digital criminalistics as a strategic direction of formation of criminalistic knowledge. *Advanced discoveries of modern science: experience, approaches and innovations*: collection of scientific papers «SCIEN-TIA» with Proceedings of the III International Scientific and Theoretical Conference. Amsterdam, The Netherlands: European Scientific Platform, 73–77.

³ Shevchuk, V. M. (2023). Digital criminalistics and its role in the detection and investigation of war crimes and military criminal offenses.

In the conditions of military aggression of the Russian Federation against Ukraine, traditional criminalistic tools and forms of collecting evidence of war crimes can work to a limited extent due to the danger to all participants in investigative (search) actions, as well as due to the impossibility of direct access to the scene. Therefore, there is a need to use digital forensics tools⁴.

In military realities, artificial intelligence technologies have taken a central place for collecting evidence of war crimes and military criminal offenses in digital criminalistics. The following areas can be distinguished: 1) |search for saboteurs and war criminals using facial recognition algorithms; 2) listening to the conversations of the Russian military-occupiers; 3) search for occupiers in social networks; 4) collection of intelligence data for the Armed Forces of Ukraine using artificial intelligence technologies; 5) identification of persons, unidentified corpses and conducting DNA analysis studies, etc.

Modern capabilities for investigating war crimes make it possible to identify sources of digital information that determine the areas for collecting and researching digital traces, which include:

Military offences and war crimes: background, theory and practice. In V. M. Stratonov (Ed.). Riga, Latvia : Baltija Publishing, 805–822.

⁴ Ackermann, V. R., Kurapka, V. E., Malewski, H., & Shepitko, V. (2020). Schaffung eines einheitlichen europäischen Kriminologischen Raumes: Die Tätigkeit öffentlicher Organisationen zur Stärkung der internationalen Beziehungen. *Kriminalistik*, 6, 355–363.

obtaining information from mobile devices of seized phones from participants in criminal proceedings; obtaining information from personal computers of individuals and legal entities; obtaining information from servers and other storage media in organizations and institutions; obtaining information on radio frequency identifiers, GPS trackers, sensors, stationary and mobile measuring devices using geopositioning, video surveillance and positioning systems; obtaining information from network services that establish voice and video communication between computers via the Internet, such as ICQ, Skype, WhatsApp, Viber, Telegram and others; obtaining information from banking systems on appropriate digital media (SD disks, flash cards, etc.); obtaining information from cellular communication operators regarding the detailing of subscriber communications and establishing the location of the subscriber by geolocation; obtaining information from video surveillance cameras of various commercial and government structures; obtaining information from cameras and video cameras confiscated from participants in criminal proceedings.

As you can see, a huge array of diverse forensically significant information, including digital information, requires constant search and development of the latest approaches to identifying and collecting evidence of war crimes¹.

¹ Textbook of criminalistics (2016). Vol. 1: General theory. Hendryk Malevski, Valery Shepitko. Kharkiv: Apostille Publishing House.

Among them, the use of artificial intelligence technologies, in particular digital forensics tools, is of particular importance. Since the early 1990s, the volume of digital information has grown so much that in 2020, the UN, with the participation of more than 150 experts, prepared a special practical guide “The Berkeley Protocol on the Effective Use of Data from Open Sources of Digital Information in Investigating Violations of International Criminal Law, Human Rights and IHL” (Berkeley Protocol, 2020)², which contains standards and methodological approaches to “the collection, storage and analysis of information in the public domain (social networks, satellite images, etc.) that can be presented as evidence in criminal proceedings.

No less important is the connection between the use of special knowledge in collecting digital traces, determining the possibilities of criminalistic research, evaluating and using the results of examinations in proving and transforming the competencies of forensic experts from most types of forensic examinations in the digital age. Currently, objects in digital form are submitted for examination both on separate storage media and on computer systems. Therefore, in

² Berkeley Protocol on Digital Open Source Investigations A Practical Guide on the Effective Use of Digital Open Source Information in Investigating Violations of International Criminal, Human Rights and Humanitarian Law. (2020). United Nations. Retrieved from <https://humanrights.berkeley.edu/programs-projects/tech-human-rights-program/berkeleyprotocol-digital-open-source-investigations>

order to legally obtain digital traces, it is necessary to use appropriate specialized knowledge, as well as conduct a forensic computer-technical examination¹. As you can see, today in military realities there is an acute issue of increasing the efficiency of investigating modern crime, including war crimes and cybercrimes using digital technologies.

Conclusions

Military aggression and the full-scale invasion of the Russian Federation into the territory of Ukraine had a significant impact on changing the priorities of the tasks of criminalistics and the specifics of the formation and application of criminalistic knowledge under martial law. The question arose of updating the development of problems of criminalistic strategy aimed at solving the strategic tasks of criminalistic science. The main task of criminalistics is the development and application of tools, techniques and methods to collect, investigate, use evidence in war and global threats. In fact, we can state the formation of a new scientific criminalistic direction of military criminalistics, the emergence of which is due to

new challenges of military threats and military aggression of the Russian Federation on the territory of Ukraine. Such studies constitute strategic areas of research in criminalistic science and are a priority in modern conditions.

The activation and dissemination of digital technologies in investigative and judicial activities, as well as the active use of such technologies in modern criminal activity, determine the importance of using digital forensics tools in detecting, documenting, investigating war crimes and countering modern criminal manifestations in the realities of today. The process of digitalization of forensic science is a natural stage in the development and formation of modern forensic knowledge, which provides for the introduction of digital technologies in various areas of forensic science, forensic science and legal practice. This leads to the actualization of the development of problems of digital forensics and an increase in the role of forensic didactics, in particular, forensic training of investigators, prosecutors, courts, detectives, forensic experts in the field of digital technologies. The modern forensic paradigm should be aimed at the further development and formation of digital forensics to effectively solve new problems in a war and strengthen the European vector for the development of forensic science.

¹ Shepitko, V. (2021). The Formation of Digital Criminalistics as a Strategic Direction for the Development of Science. *17 Medzinardny Kongres Kriminalistika a Forenzne Vedy: Veda, Vzdelavanie, Prax. Zbornik Prispevkov*. Bratislava, 185–196.