

## **DOCUMENTING WAR CRIMES AGAINST THE CULTURAL HERITAGE OF UKRAINE: DIGITAL TECHNOLOGIES AND INNOVATIONS**

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### **INTRODUCTION**

The start of a full-scale war on February 24, 2022 was a turning point not only for Ukraine, but also for the whole world. In Ukraine, not only military units are attacked and bombed, but also barbarically destroy critical infrastructure, in particular residential areas, civilians and even children die. The basic principles of international cooperation and norms of international law are being violated. The Ukrainian people protect not only their country and nation, but also the independence of other European states, as well as the fundamental principles of international law: democracy, human rights and freedoms, the rule of law, and our common security for now and forever, the future of all humanity. The situation is especially difficult in regions where active hostilities are taking place. In the east of Ukraine, Kharkiv is subjected to merciless bombing, where many monuments of Ukrainian culture, fundamentally important for its history, are concentrated<sup>1</sup>. Among the damaged monuments in the center of Kharkiv is the building of the Kharkiv Art Museum, built in 1912 as a mansion designed by the outstanding Ukrainian architect O. Beketov. As a result of the bombings, the Kharkiv State Scientific Library named after V. G. Korolenko, built in 1899–1901, also according to the project of O. Beketov.

As a result of a missile strike on May 7, 2022, the National Literary and Memorial Museum of G. S. Skovoroda was destroyed in the village of Skovorodinovka in Kharkiv region, where an outstanding Ukrainian philosopher, a person of a high European level of Education, a poet, also known for his symbolic drawings, settled in an old manor of the XVIII century shortly before his death. Here grows a 700-year-old oak tree, under which he worked, here, on the territory of the estate, Hryhoriy Skovoroda was buried.

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<sup>1</sup> У Харкові 24 історичні будівлі пошкоджені внаслідок ударів РФ 16 січня (18 січня 2024). URL: <https://suspilne.media/kharkiv/664194-u-harkovi-vnaslidok-udariv-rf-16-sicna-poskodzeni-24-istoricni-budivli/>

Given this, the culture of Ukraine, especially the cultural heritage, is under attack and needs to be protected. Despite its potential vulnerability in times of crisis, the culture has not become defenseless, has demonstrated its resistance and, ultimately, its ability to shape its own agenda. Cultural workers, volunteers, soldiers, local communities, thousands of caring people show their civic responsibility, and in many cases real heroism in protecting the culture and cultural heritage of Ukraine.

At the same time, the solidarity of the whole world, international assistance in saving and preserving the culture of Ukraine during the war are unprecedented in intensity and scale.

In responding to the actions of the aggressor Army, Ukraine focuses on the world experience laid down in the norms of international law, namely The Hague Convention for the protection of cultural property in the event of an armed conflict of 1954, the first and second protocols to it.

The realities of a full-scale war attest to the ineffectiveness of those provisions of the Hague Convention, which refer to the obligation of the contracting parties to refrain from any hostile acts against cultural property, looting, theft, misappropriation of them, acts of vandalism against them, etc. However, it is these legal norms that make it possible to classify such actions of Russians as crimes, respectively, this imposes an obligation on both Ukraine and the international community to make efforts to investigate each such recorded crime and bear responsibility for it.

The problem of Cultural Heritage Protection has been repeatedly paid attention in legal Science, and various aspects of this legal institution have been studied, depending on the branch of law. However, the issues of investigating criminal offenses in the field of protection of cultural heritage objects are not sufficiently covered in the scientific literature<sup>2</sup>. It should be noted that the literature sources mainly considered certain aspects of the use of information and analytical systems and video monitoring technologies in the activities of law enforcement agencies.

The aim of the study is to develop an appropriate level of knowledge for professional documentation of cases of destruction and damage to cultural property as a result of armed conflict – both to record and take into account these facts, and to strengthen the capabilities of authorized bodies

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<sup>2</sup> Стаття написана у межах розробки фундаментальної теми «Інноваційні методи та цифрові технології в криміналістиці та судовій експертизі», яка досліджується фахівцями НДІ вивчення проблем злочинності імені академіка В. В. Сташиса НАПрН України.

and their representatives in investigating and establishing violations of international humanitarian law<sup>3</sup>.

The works of such legal scholars as G. K. Avdeeva, V. S. Batyrgareeva, V. I. Borisov, T. Ya. Gnidets, Yu. I. Dmitrik, K. V. Dubonos, N. M. Dyachenko, V. A. Zhuravel, V. P. Zakharov, A. A. Ignatovich, R. S. Kozyakov, V. O. Konovalova, T. M. Lemekha A. M. Lysenko, O. S. Melnik, A. O. Moroz, I. V. Oleshko, Yu. V. Osadchaya, O. V. Rybalsky, V. I. Rudeshko, V. I. Solovyov, L. I. Sopilnik, I. O. Suprun, V. V. Topchy, A. O. Fesenko, V. G. Khakhanovsky, L. M. Khmelnychy, R. Yu. Tsarev, V. A. Shvets, V. M. Shevchuk, V. Yu. Shepitko, and others were devoted to the use of information technologies and innovations in the investigation of criminal offenses<sup>4</sup>.

At the same time, not all currently existing technologies have been the subject of research and coverage in the context of the investigation of war crimes and crimes of aggression against the culture and cultural heritage of Ukraine. Therefore, the issue of studying the possibility of introducing such technologies in activities related to the investigation and prevention of criminal offenses needs further consideration. Also, in connection with the war in Ukraine, the issue of using the capabilities of information analytics technologies in improving the effectiveness of investigating war crimes and crimes of aggression against the culture and cultural heritage of Ukraine is becoming extremely relevant.

### **1. The role of cooperation between law enforcement agencies, the armed forces of Ukraine and international human rights organizations in the protection of the cultural heritage of Ukraine**

In the context of an aggressive war against the Ukrainian people, state policy in the field of cultural heritage is becoming an important factor in ensuring the national security of Ukraine. Cultural heritage is of key importance for creating a material and non-material cultural, value basis for the unity of society, strengthening Ukrainian civil identity, further

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<sup>3</sup> Стаття написана у межах розробки фундаментальної теми «Інноваційні методи та цифрові технології в криміналістиці та судовій експертизі», яка досліджується фахівцями НДІ вивчення проблем злочинності імені академіка В. В. Сташиса НАПрН України.

<sup>4</sup> Проблеми використання систем штучного інтелекту в роботі органів кримінальної юстиції // Використання технологій штучного інтелекту у протидії злочинності : матеріали наук.-практ. онлайн-семінару (м. Харків, 5 листоп. 2020 р.). Харків : Право, 2020. С. 6–10. URL: <https://dspace.nlu.edu.ua/bits.../123456789/18957/1/6-10.pdf>

development of Ukraine as an integral and Democratic state, and cohesion of the Ukrainian people<sup>5</sup>.

The large-scale invasion of the Russian Federation on the territory of Ukraine on February 24, 2022, threatened a huge layer of the cultural heritage of our state. During the fighting, many churches, museums, architectural and sculptural structures, libraries, and other historical and cultural monuments were threatened with destruction, and some have already been destroyed. Currently, the website of the Ministry of culture and information policy of Ukraine has recorded 513 damaged and destroyed cultural heritage sites and cultural institutions of Ukraine<sup>6</sup>.

According to scientists of the Vernadsky National Library of Ukraine, the large-scale invasion of the territory of Ukraine on February 24, 2022 provoked almost the largest global crisis in the last 80 years – humanitarian, crisis of international law and international institutions, and also threatened a huge layer of European cultural heritage<sup>7</sup>. During the fighting, many objects of cultural heritage of Ukraine, in particular churches, museums, architectural and sculptural structures, libraries and other historical and cultural monuments are under threat of destruction or damage, and some have already suffered them. UNESCO's concern about this seems understandable – there are seven World Heritage sites on the territory of Ukraine, in particular, located in Lviv and Kyiv; the cities of Odesa and Kharkiv are included in the network of creative cities, and some national archives of Ukraine are included in the UNESCO Memory of the World Register. Today, the broad implementation of international humanitarian law and international law for the protection of cultural property in the National, in particular criminal legislation of Ukraine remains an urgent issue. It is necessary to rely on the world experience laid down in the norms of international law, namely the Hague Convention for

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<sup>5</sup> Культурна спадщина та національна безпека : аналіт. доп. / [В. Потапенко, Ю. Тищенко, Ю. Каплан та ін.] ; за ред. В. Потапенка. Київ : НІСД, 2023. 58 с. <https://doi.org/10.53679/NISS-analytrep.2023.08> ; URL: [https://niss.gov.ua/sites/default/files/2023-09/ad\\_kult\\_spad\\_nac\\_bezp\\_06092023.pdf](https://niss.gov.ua/sites/default/files/2023-09/ad_kult_spad_nac_bezp_06092023.pdf)

<sup>6</sup> 1987 об'єктів культурної інфраструктури зазнали пошкоджень чи руйнувань через російську агресію (02.05.2024). URL: <https://mcip.gov.ua/news/1987-obyektiv-kulturnoyi-infrastruktury-zaznali-poshodzhen-chy-rujnuvan-cherez-rosijsku-agresiyu/>; ЮНЕСКО: з початку війни у Харківській області пошкоджено 51 культурну пам'ятку (перелік) 24.10.2022. URL: <https://times.kharkiv.ua/2022/10/24/yunesko-z-pochatku-vijni-u-harkivskij-oblasti-poshodzhen-51-kulturnu-pam-yatku-perelik/>

<sup>7</sup> Кара-Васильева Т. В. Культурна спадщина України: дослідження, її стан у період новітніх викликів сучасності. *Вісник Національної академії наук України*. – 2022. № 7. С. 42–46. URL: [http://nbuv.gov.ua/UJRN/vnanu\\_2022\\_7\\_13](http://nbuv.gov.ua/UJRN/vnanu_2022_7_13)

the protection of cultural property in the event of armed conflict of 1954, the first and second protocols thereto. In addition, it is extremely important to improve the quality of national investigations of war crimes, documentation of war crimes, and the creation of an evidence base that will effectively defend the interests of Ukraine both in international courts and to administer justice at the national level.

Currently, the issue of preserving architectural monuments is particularly relevant for Ukraine, whose cultural and historical heritage is being purposefully destroyed every day<sup>8</sup>. Preservation and multiplication of cultural heritage is ensured by a system of legal and organizational and management measures. The basic principles of protection of cultural heritage objects are formulated in the Constitution, international conventions ratified by the Parliament of Ukraine, legislative acts on ensuring the preservation of cultural heritage, including: Laws of Ukraine "On the protection of cultural heritage", "On the protection of archaeological heritage", "On museums and museum case", "On the export, import and return of cultural values" and other normative acts. A comprehensive solution to the problem of ensuring criminal legal protection of cultural heritage and cultural values is possible with the effective implementation of the state policy in the field of prevention by establishing effective cooperation between law enforcement agencies, the Armed Forces of Ukraine and the Ministry of culture of Ukraine, whose activities should be aimed at developing specific measures, improving the effectiveness of preventive measures<sup>9</sup>.

Activities aimed at preserving and protecting the cultural heritage of the Ukrainian people should be controlled and coordinated by the state. However, this control and coordination will never be effective without proper and maximally open communication with all subjects of the process – managers and employees of cultural institutions, members of professional public organizations, volunteers, representatives of local self-government bodies, central, military and law enforcement authorities. This communication cannot be fragmented and one-sided, but must work as an effective system that ensures communication at all levels and contributes to the adoption of the most effective operational decisions.

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<sup>8</sup> Прокурори на захисті державних інтересів: Захист культурної спадщини на Одещині. (29.03.2024). URL: <https://www.gp.gov.ua/ua/posts/prokurori-na-zaxisti-derzavnix-interesiv-zaxist-kulturnoyi-spadshhini-na-odeshhini>

<sup>9</sup> Кулакова Н. В. Кримінально-правова охорона об'єктів культурної спадщини України. Науковий вісник Міжнародного гуманітарного університету. URL: <https://www.vestnik-pravo.mgu.od.ua/archive/juspradenc9/52.pdf>

The Decree of the President of Ukraine dated May 11, 2023 No. 273/2023 approved the Comprehensive Strategic Plan for the Reform of Law and Order Bodies as a Part of the Security and Defense Sector of Ukraine for 2023–2027<sup>10</sup>. "Every element of the state system – law enforcement agencies, first of all – should work in such a way that people really feel safe and secure, so that people really feel justice, so that it is guaranteed at the level of institutions, at the level of the daily work of those by whom people judge the state. Trust in the state, trust in the state is formed from trust in those who act on behalf of the state. Law enforcement officers and the prosecutor's office system are key in this. Of course, together with all others who work in the state apparatus," the president of Ukraine stressed<sup>11</sup>.

In May 2023, the Ministry of Culture and Information Policy of Ukraine and the Ministry of Culture and National Heritage of the Republic of Poland concluded a Memorandum of Cooperation regarding the inventory of architectural and archaeological losses as a result of the armed aggression of the Russian Federation against Ukraine<sup>12</sup>. The initiative was called "Project to save the Ukrainian heritage". Its purpose is to support efforts to save and preserve the cultural heritage of Ukraine, which is under threat of destruction or damage, with special emphasis on UNESCO World Heritage sites and sites included in the preliminary list of the UNESCO Convention for the protection of the world cultural and Natural Heritage, documenting and analyzing its current state of conservation and the degree of its damage in certain administrative units that are particularly affected by the conduct of hostilities, as well as analyzing the effectiveness of methods and procedures used today to document cultural losses in territories affected by hostilities.

All of the above will be implemented, in particular, through:

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<sup>10</sup> On the Comprehensive Strategic Plan for reforming law enforcement agencies as part of the security and defense sector of Ukraine for 2023–2027: decree of the president of Ukraine No. 273/2023 (2023, May 11). URL: <https://www.president.gov.ua/documents/2732023-46733>

<sup>11</sup> Президент України схвалив Комплексний стратегічний план реформування органів правопорядку (12.05.2023). URL: <https://www.gp.gov.ua/ua/posts/prezident-ukrayini-sxvaliv-kompleksnii-strategicnii-plan-reformuvannya-organiv-pravoporyadku>

<sup>12</sup> Україна та Польща підписали Меморандум про співпрацю щодо інвентаризації втрат культурної спадщини внаслідок вторгнення рф. (24 травня 2023). URL: <https://www.kmu.gov.ua/news/ukraina-ta-polshcha-pidpysaly-memorandum-pro-spivpratsiu-shchodo-inventaryzatsii-vtrat-kulturnoi-spadshchyny-vnaslidok-vtorhnennia-rf>

- preparation of documentation on the destruction and damage of cultural heritage objects as a result of military operations of the aggressor country using modern non-invasive methods;
- use of satellite technologies in identification and macro- and micro-space analysis of the state of preservation of cultural heritage sites in the territories liberated from occupation and in post-conflict territories;
- facilitating the collection of evidence on crimes against cultural heritage for investigation by the international criminal prosecution;
- substantive support for the process of building a new system of integrated protection and management in the field of cultural heritage of Ukraine;
- training of a group of Ukrainian specialists to document the damage caused by the war to cultural heritage, based on international and Polish experience in protecting the cultural heritage of post-conflict territories;
- development of theoretical foundations and procedures for the updated interdisciplinary methodology of field inventory of military damage in the field of cultural heritage, adapted to the conditions of the European theater of operations.

Cultural heritage is the matter of society. And raising public awareness about this aspect of life in Ukraine – the harm it is caused by the war – is actually very important.

## **2. The use of information and analytical systems and technologies of video surveillance and documentation of the consequences of war in order to increase the effectiveness of the investigation and combating criminal offenses against cultural heritage**

Immediately following a full-scale invasion in 2022, the Smithsonian Institution in the US created the Cultural Rescue Initiative in collaboration with the Virginia State Museum of Natural History and the University of Maryland, which have the necessary equipment and expertise to monitor and preserve cultural heritage sites<sup>13</sup>.

Researchers at the Smithsonian American Museum Center have launched a project to remotely monitor Ukraine's cultural heritage to document damage to cultural heritage for potential future war crimes investigations. To analyze the state of cultural monuments, researchers use satellite photo technology developed at NASA to detect forest fires. This

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<sup>13</sup> Музейники США за допомогою технологій НАСА допомагають Україні збирати докази воєнних злочинів РФ (07.09.2023). URL: <https://www.radiosvoboda.org/a/kulturna-spadshchyna-voyenni-zlochyny/32596637.html>

technology captures kinetic activity using infrared heat sensors. Photos with kinetic activity are compared with a map of cultural sites and show which object was potentially in a fire or under fire. During the monitoring process, researchers can inform colleagues working on the preservation of cultural objects about the status of the object in an inaccessible area, and they can advise them on which buildings should be saved as a priority. This helps our Ukrainian colleagues determine where resources should be directed. On their map, as of September 2023, 28,000 objects of Ukrainian Cultural Heritage were identified, which they can observe. These are museums, memorials, monuments, religious institutions, libraries, and archaeological sites. In the first year of a full-scale war alone, researchers have documented more than one and a half thousand objects that may be damaged. At the same time, according to the Ministry of culture and information policy of Ukraine, it was officially confirmed that 664 cultural heritage sites were damaged in Ukraine. How many of them were actually destroyed and who exactly should be held responsible for this, Ukraine is investigating in court, after de-occupation. In particular, with the help of researchers from the Smithsonian Institution.

Video surveillance is a surveillance process implemented using optoelectronic devices designed for visual monitoring and automatic analysis<sup>14</sup>. Video surveillance systems are widespread and widely used in various spheres of human life. To control the environment for the purpose of life safety, video surveillance systems are now widely used – a set of equipment and software designed to monitor behavior, actions or information in order to collect information, influence, manage and coordinate. Thanks to automation and speed of work, the use of biometrics for face recognition, such technologies are very useful in any field of human activity where it is necessary to check and confirm a person by its biometric characteristics. Moreover, it is no longer possible to give an exhaustive list of areas of application of biometric technologies today, since the very idea of checking and confirming a person's identity is already becoming more and more attractive and associated with security.

On February 20, 2024, the Verkhovna Rada of Ukraine registered a draft law "On a unified system of video monitoring of the state of public

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<sup>14</sup> Рувінська В. М., Девятков В. В. Відеоспостереження для систем безпеки: моделі, методи та запропоновані рішення. Інформатика та математичні методи в моделюванні. 2021. Том 11, № 4. С. 331–342. URL: [http://immm.op.edu.ua/files/archive/n4\\_v11\\_2021/2021\\_4\(9\).pdf](http://immm.op.edu.ua/files/archive/n4_v11_2021/2021_4(9).pdf)



security", which proposes to introduce a unified all-Ukrainian system of video monitoring using personal data of citizens<sup>15</sup>.

The presented draft law was developed in order to ensure national and state security, increase the overall level of Public Security and order, ensure the safety of places of residence and stay of citizens by introducing on the basis of state authorities and local self-government bodies in accordance with the unified functional and technological standards of the unified system of video monitoring of the state of Public Security, which will ensure monitoring and contribute to the prevention and elimination of possible threats, as well as control over the elimination of the consequences of emergencies and offenses. The draft law provides that the state regulation of public relations in the sphere of creation and implementation of a unified system of video monitoring of the state of public security will be based on the following principles:

- Rule of Law;
- legality;
- respect and observance of human and citizen rights and freedoms;
- openness and transparency;
- continuity;
- ensuring the safety of people, society and the state when using information and communication technologies;
- respect for human dignity;
- openness to democratic civilian control.

In order for the future video monitoring system of Ukraine to work, the draft law provides for regulatory regulation in the following important areas:

- uniform functional and technical requirements for the construction and functioning of video monitoring systems for the state of Public Security at the central, regional and local levels, departmental video monitoring systems for enterprises, institutions of organizations (regardless of ownership forms) and individuals installed in public places, the procedure for access to information, as well as the composition of video data, metadata, analytical data, video archives, alarms created by them;
- ensuring uniform rules for information exchange at the state, regional and local levels between subjects of the unified video monitoring system

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<sup>15</sup> On the unified system of video monitoring of the state of Public Security: Draft Law No. 11031 (2024, February 20). URL: <https://itd.rada.gov.ua/billInfo/Bills/Card/43733>.

for the state of Public Security through a single information space, taking into account the differentiation of access rights to information;

– ensuring the protection of information, including personal data in video monitoring systems for the state of Public Security at the central, regional and local levels and departmental video monitoring systems for enterprises, institutions of organizations (regardless of ownership forms) and individuals established in public places.

According to the authors of the draft law, the implementation of a unified system of video monitoring of the state of public security corresponds to and is based on such important normative legal acts as the Constitution of Ukraine, the Code of Civil Protection of Ukraine, the laws of Ukraine "On the National Security of Ukraine", "On the Protection of Information in Information and Communication Systems", "About electronic communications", "About critical infrastructure", "About objects of increased danger", "About the National Police".

At the 11th emergency special session of the UN General Assembly (hereinafter referred to as the UN General Assembly) on November 14, 2022, the resolution "promoting legal protection and ensuring compensation for losses in connection with aggression against Ukraine" ES – 11/5 was adopted, which called on the aggressor country to pay war reparations to Ukraine by creating an international compensation mechanism for losses caused by a full-scale invasion<sup>16</sup>.

This resolution contains three cornerstones.

First, it is confirmed that the country is carrying out aggression and under international law must pay reparations.

Secondly, the UN countries are recommended to create an international damage register as a database for recording damage caused by the Russian Federation after February 24, 2022 on the territory of Ukraine.

Third, the UN General Assembly recognized the need to create an international compensation mechanism, since there is still no court to which victims could apply for damages.

After the adoption of the UN General Assembly resolution, which was voted for by 94 States, Ukraine, together with its partners, began negotiations on the creation of appropriate registers.

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<sup>16</sup> Resolution of the General Assembly of the United Nations A/RES/ES-11/5 "Promoting the implementation of legal protection and provision of compensation for damage in connection with aggression against Ukraine" (November 14, 2022). URL: [https://rd4u.coe.int/documents/358068/372244/A\\_RES\\_ES-11\\_5.pdf/079afc90-b392-a0ab-43ad-41409c7e8aa4?t=1708702069853](https://rd4u.coe.int/documents/358068/372244/A_RES_ES-11_5.pdf/079afc90-b392-a0ab-43ad-41409c7e8aa4?t=1708702069853)

The Council of Europe has proposed creating such a register under its auspices. And in May 2023, a corresponding agreement was signed in Reykjavik, which can be joined not only by Coe members. 43 countries and the European Union as a regional organization have joined the document. The register operates as a legal entity established under Dutch law and located in The Hague<sup>17</sup>.

Law No. 2923-IX of February 23, 2023 – the central regulatory act regulating the reconstruction of real estate and the mechanism of payment of compensation for housing damaged or destroyed as a result of the war<sup>18</sup>. The adoption of this law was an important step in ensuring the social protection of citizens, which determined the legal and organizational basis for providing state compensation for damaged and destroyed certain categories of real estate objects as a result of hostilities, terrorist acts caused by military aggression.

By Resolution No. 624 of June 16, 2023, the Cabinet of Ministers of Ukraine approved the Procedure for Maintaining the Register of Damaged and Destroyed Property, which in particular was:

- the list of functions of the Register was approved;
- the list of information stored in the Register is defined;
- the roles of users of the Register, in particular local self-government bodies, military administrations, state-owned enterprises, ministries and other bodies of the central executive power, are specified;
- the procedure for obtaining access to the Register for public registrars and users of register information is detailed;
- a clear list of interactions with other information and communication systems and data exchange is recorded<sup>19</sup>.

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<sup>17</sup>Register of losses for Ukraine. Chronology of events. URL: <https://rd4u.coe.int/uk/timeline>

<sup>18</sup> Law of Ukraine No. 2923-IX «On compensation for damage and destruction of certain categories of immovable property as a result of hostilities, acts of terrorism, sabotage caused by armed aggression of the Russian Federation against Ukraine, and the State Register of property damaged and destroyed as a result of hostilities, acts of terrorism, sabotage caused by armed aggression of the Russian Federation against Ukraine». (2023, February 23) / Verkhovna Rada of Ukraine. URL: <https://zakon.rada.gov.ua/laws/show/2923-20#n2>

<sup>19</sup> Decree of the Cabinet of Ministers of Ukraine No. 624 «Some issues of ensuring the functioning of the State Register of property damaged and destroyed as a result of hostilities, terrorist acts, sabotage caused by the armed aggression of the Russian Federation against Ukraine» (2023, June 13). URL: <https://zakon.rada.gov.ua/laws/show/624-2023-%D0%BF#Text>

By Resolution No. 1256 of 12/01/2023 "On Amendments to the Resolution of the Cabinet of Ministers of Ukraine No. 326 of March 20, 2022", the Government approved the list of categories of damage and losses and instructed the Ministry of Justice to submit them to the Register of Losses as proposals for possible consideration during the creation of rules and regulations governing the operation of the Register of Losses. The Register is being created jointly with Ukraine and for Ukraine, there is an understanding that Ukraine's proposals will be taken into account during the development of the Register's rules<sup>20</sup>.

Modern tasks of digital criminalistics are the search and analysis of digital traces, data analysis, and collection of evidence-based information in a digital environment. Digital evidence should be understood as factual data that is presented in the form of a binary (binary) code and contains information that is important for the objective resolution of the case. Ukraine has created digital platforms designed to collect evidence of war crimes in Ukraine, in particular the portal "cultural crimes" to collect evidence of the destruction of historical and cultural monuments by the Russian army<sup>21</sup>.

On July 05, 2023, the public organization "Anti-Corruption headquarters" together with representatives of the Ministry of restoration, the Ministry of digital transformation, the Kiev School of Economics, The Office of the Prosecutor General and Partners spoke about the need to create a single digital platform for fixing damaged and destroyed objects<sup>22</sup>. It is necessary to collect evidence of the crimes of the aggressor country, ensure transparency and accountability in the restoration of all destroyed and damaged facilities. The project is being implemented in Ukraine by the International Organization Pact with the help of the United States Agency for International Development (USAID). To do this, we created a map of destruction and recovery – the only such tool in the form of open data<sup>23</sup>. Recording of destroyed cultural objects and monuments is possible using the "Pact Providence" application. This software application helps you collect information about objects in the form of verified open data and record them while preserving metadata. As part of the project, a new register of

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<sup>20</sup> Resolution of the Cabinet of Ministers of Ukraine No. 1256 «On amendments to the Resolution of the Cabinet of Ministers of Ukraine dated March 20, 2022 No. 326» (2023, December 1). URL: <https://zakon.rada.gov.ua/laws/show/1256-2023-%D0%BF#Text>

<sup>21</sup> Портал «Культурні злочини». URL: <https://culturecrimes.mkp.gov.ua>

<sup>22</sup> Запустили "Реєстр зруйнованих об'єктів культурної спадщини України". (05 липня 2023 р.). URL: <https://shtab.net/news/view/vprovadzhemo-cifrovi-instrumenti-dlya-fiksaciji-v/>

<sup>23</sup> Карта Відновлення та Руйнувань. URL: <https://reukraine.shtab.net/objects>

“destroyed objects of cultural heritage of Ukraine” was also launched. With his help, it became possible to fix damaged cultural objects (historical and cultural monuments, attractions and buildings). After all, transparency in fixing affected objects will help transparent recovery. The event is organized as part of the program for promoting public activity "join us!", which is funded by USAID and implemented by Pact in Ukraine.

A Unified Tourist Register is being created in Ukraine, which will start working on January 1, 2025. On June 21, 2024, the Cabinet of Ministers of Ukraine approved the Procedure, which defines the procedure for maintaining the Unified Tourist Register, its structure, functioning, administration, the procedure for forming and entering information about subjects of tourist activity, and also provides for interaction between public electronic registers and other electronic information resources<sup>24</sup>. The register is created in order to ensure equal opportunities in the market of tourist services, to provide subjects of tourist activity, state and local self-government bodies, as well as other participants in civil relations with reliable information about subjects of tourist activity. A new department is being created in Ukraine – the central body of the executive power, which implements state policy in the field of tourism and resorts. This will make it possible to reduce to a minimum the corruption component in the organization of tourism activities, create equal rights for the subjects of tourism activities, conditions for the effective functioning of the tourist services market and its development, will contribute to the improvement of the quality of the national tourism product to the level of international and European standards and the level of the quality of the provision of sub objects of tourist activity. A business entity acquires the right to carry out tourist activities by submitting to the central executive body that implements state policy in the field of tourism and resorts, a notification on the start of such activities. The draft law also proposes to replace the licensing of tour operator activities with the entry of information about the subject of tourist activity into the Unified Tourist Register. According to the authors of the document, this will lead to a reduction of administrative pressure on business entities and simplification of starting and running a business by eliminating unnecessary restrictions on the conduct of business activities in the field of tour operator activities.

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<sup>24</sup> В Україні створюють Єдиний туристичний реєстр: коли з'явиться та що у ньому буде. Судово-юридична газета (28.06.2024). URL: <https://sud.ua/uk/news/ukraine/304442-v-ukraine-sozdatut-edinyy-turisticheskiy-reestr-kogda-poyavitsya-i-chto-v-nem-budet>

### **3. The role of international information cooperation of criminologists and forensic experts in the investigation of crimes against cultural heritage**

International cooperation between criminologists and forensic experts has traditionally played a special role in the investigation of war crimes. Historically, this is due to the role of Forensic Medicine and expertise in recording traces of crimes, analyzing them, and forming legal, forensic, and expert opinions of witnesses. A striking historical example in this context is the activity of an outstanding forensic specialist R. A. Reiss to fix traces of international crimes committed during the first World War<sup>25</sup>. The history of criminology has other examples of international cooperation between criminologists and forensic experts: the International Union of Forensic Medical Experts ("IFU")<sup>26</sup>.

Thanks to joint efforts, the president, the Cabinet of Ministers and the Verkhovna Rada of Ukraine managed to use legitimate international legal mechanisms, primarily the International Criminal Court and the UN Security Council, to bring those responsible to justice for violating international humanitarian law and committing war crimes in Ukraine. At the same time, in the territories of Ukraine liberated from occupation (Bucha, Gostomel, Irpen, etc.), it is already possible to implement a special mechanism of Justice, which consists in the joint work of national and international specialists: experts, investigators, prosecutors and judges to collect objective and impartial evidence of gross violation of international laws and customs of warfare in Ukraine.

There are various forms of international cooperation in the field of Forensic Science. In particular, the main ones include: 1) information exchange (scientific and information exchange); 2) joint scientific and practical events (conferences, symposia, congresses, etc.); 3) training of expert personnel and professional development abroad; 4) interaction within the framework of improving the quality of forensic examinations in different countries; 5) international standardization of forensic medical activities; 6) interaction within international expert associations

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<sup>25</sup> Rodolphe Archibald Reiss. URL: <https://crimcongress.com/portretnaya/rejs-rudolf-archibald/>

<sup>26</sup> Shepitko, M. (2019). Ukrainian Group of International Union of Penal Law: Way from Vienna to Paris. *A First Printed Criminalist*, 18, 43–61 ; Shepitko, V. Y., Olkhovsky V. O., Shepitko M. V. (2020) The process of scientific knowledge integration in crime prevention and trends of medical criminalistics development in ukraine in XIX – early XX century. *Wiadomosci lekarskie* (Warsaw, Poland: 1960), no. 73(1), pp. 176–179.

(organizations); 7) involvement of forensic experts from different countries in the investigation and judicial review of international crimes<sup>27</sup>.

A form of international cooperation in the field of forensic expertise is the participation of forensic experts from different states in the investigation and judicial review of crimes in the field of humanitarian law and other crimes of an international nature<sup>28</sup>. Thus, the Netherlands Institute of Forensic Science (NFI) is one of the world's leading forensic laboratories<sup>29</sup>. This is the National Institute of forensic expertise of the Netherlands, located in the Hague. It is an autonomous division of the Ministry of security and Justice of the Netherlands, which reports to the Directorate-General for the administration of justice and law and order. The range of expert activities includes more than 30 forensic expert areas, including forensic medical research (including DNA examinations. The Dutch DNA database is maintained. NFI has three main areas of activity: conducting forensic examinations in criminal proceedings; developing new methods of forensic expertise; training experts and improving their skills. NFI experts participated in the work of the Joint Investigation Team (JIT) consisting of representatives of Ukraine, the Netherlands, Malaysia, Australia and Belgium during the investigation of the circumstances of the crash of the Malaysian Airlines Boeing-777 flight MH17 on July 17, 2014<sup>30</sup>.

A form of international cooperation in the field of forensic expertise is the participation of forensic experts from different states in the investigation and judicial review of crimes in the field of humanitarian law and other crimes of an international nature<sup>31</sup>. The Verkhovna Rada of Ukraine and the European Parliament ratified the association agreement between Ukraine and the EU on September 16, 2014.

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<sup>27</sup> Shepitko, V. Y., Shepitko, M. V. (2021) The role of forensic science and forensic examination in international cooperation in the investigation of crimes. *Journal of the National Academy of Legal Sciences of Ukraine*, no. 28(1), pp. 179–186 (in English).

<sup>28</sup> Shepitko, V. Y., Shepitko, M. V. (2021) The role of forensic science and forensic examination in international cooperation in the investigation of crimes. *Journal of the National Academy of Legal Sciences of Ukraine*, no. 28(1), pp. 179–186 (in English).

<sup>29</sup> Netherlands Forensic Institute (NFI). URL: <https://www.forensicinstitute.nl/>

<sup>30</sup> Останні дані кримінального розслідування катастрофи авіалайнера Boeing-777 рейса MH17 (24.05.2018). <https://www.prosecutionservice.nl/latest/news/2018/05/24/the-latest-data-from-the-criminal-investigation-of-the-crash-of-the-boeing-777-flight-mh17>

<sup>31</sup> Shepitko Valery Yu., Shepitko Mykhaylo V. (2021) The role of forensic science and forensic examination in international cooperation in the investigation of crimes. *Journal of the National Academy of Legal Sciences of Ukraine*. Vol. 28, No. 1, 2021. P. 179–186. (in English).

The rules of Procedure and Evidence of the International Criminal Court contain rules, in particular articles 42, 43, 56, 93, which provide for the possibility of involving experts in the activities of the International Criminal Court<sup>32</sup>. 38 countries of the world have already applied to the International Court of Justice in The Hague because of Russia's crimes against Ukraine<sup>33</sup>. The International Criminal Court will conduct an independent investigation of war crimes in Ukraine, seeking to establish the truth. The rules of Procedure and Evidence of the International Criminal Court also provide for the use of specialized knowledge. Thus, Rule 19 "Expertise in the unit" regulates the possibility of applying for an expert examination in various cases<sup>34</sup>.

The European network of forensic institutes (ENFSI) was founded in 1995 to improve the mutual exchange of information in the field of Forensic Science. This, as well as improving the quality of Forensic Services in Europe, have become the main problems of the network. In addition to general work in the field of quality and competence management, research and development, education and professional training, 17 different expert working groups are engaged in various forensic examinations<sup>35</sup>. ENFSI is the world's largest United Organization of forensic institutions, which has received international recognition. Among the countries whose institutions are part of the European network: Armenia, Austria, Azerbaijan, Belgium, Bulgaria, Great Britain, Hungary, Greece, Georgia, Denmark, Spain, Ireland, Italy, Lithuania, Latvia, Netherlands, Norway, Poland, Romania, Serbia, Slovakia, Slovenia, Turkey, Sweden, Switzerland. The most well-known ENFSI institutions that conduct expert research are the Dutch, Polish, Prague and Hungarian forensic institutes.

Kyiv Research Institute of Forensic Expertise of the Ministry of Justice of Ukraine (hereinafter KNDISE) in accordance with Art. 24 of the Law of Ukraine "On Forensic Expertise" is in international relations with scientific institutions, educational institutions of foreign countries, international and non-governmental organizations, holds joint conferences, symposia,

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<sup>32</sup> Rome Statute of the International Criminal Court. URL: <https://www.icc-cpi.int/sites/default/files/RS-Eng.pdf>

<sup>33</sup> United Kingdom government official. (2022) URL: <https://twitter.com/BorisJohnson/status/1499123882296582149>

<sup>34</sup> The Rules of Procedure and Evidence of the International Criminal Court. URL: [https://www.icc-cpi.int/sites/default/files/NR/rdonlyres/F1E0AC1C-A3F3-4A3C-B9A7-B3E8B115E886/140164/Rules\\_of\\_procedure\\_and\\_Evidence\\_English.pdf](https://www.icc-cpi.int/sites/default/files/NR/rdonlyres/F1E0AC1C-A3F3-4A3C-B9A7-B3E8B115E886/140164/Rules_of_procedure_and_Evidence_English.pdf)

<sup>35</sup> European Network of Forensic Science Institutes. URL: <https://enfsi.eu/>



seminars and exchanges specialists within the framework of international projects and programs and outside the boundaries of relevant programs. In 2017, KNDISE became a member of the European Network of Forensic Science Institutes (ENFSI). It should be noted that the National Scientific Center "Institute of Forensic Expertises named after Post Prof. M.S. Bokarius" (Kharkov) became a member of the European network of forensic institutions in 2018<sup>36</sup>.

In 2019, KNDISE became the first institution among the expert research institutions of forensic examinations of the Ministry of Justice of Ukraine, which accepts a part in the exchange program CEPOL – the European Union Agency for law Enforcement training<sup>37</sup>. CEPOL provides an opportunity to become participants in the exchange program for forensic experts and specialists of KNDISE who have become active participants in the exchange and training program on the Leed CEPOL educational platform. CEPOL promotes cooperation and knowledge sharing among EU law enforcement officials (including third countries), and now forensic institutions, on issues arising from EU security priorities, in particular in terms of EU policy on Combating Organized Crime. In countries that cooperate with CEPOL, there are National CEPOL divisions (National contact points). The involvement of the TAIEX (Technical Assistance Information Exchange) tool is also a priority in KNDISE's international activities. This is a type of external assistance provided by the European Commission to exchange information in order to build the institutional capacity necessary to adapt national legislation to the *acquis communautaire*. Within the framework of the TAIEX tool, KNDISE experts conduct study visits that provide an opportunity to study the experience of an EU member state, organize and conduct seminars and working meetings with relevant partners of EU member states in the field of forensic expertise.

On May 17, 2024, the National Scientific Center «Hon. Prof. M.S. Bokarius Forensic Science Institute» hosted the international scientific and practical conference "topical issues of forensic expertise and criminalistics" on the occasion of the 100th anniversary of the birth of M. S. Romanov. In their reports, the scientists analyzed the current state of the legislation on forensic expertise in Ukraine and identified

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<sup>36</sup> Делегація ХНДІСЕ на щорічній зустрічі ENFSI у місті Будапешт (2018). URL: <https://www.hniise.gov.ua/14143-delegatsya-xndse-na-shchorochni-zustrch-enfsi-umst-budapesht.html>

<sup>37</sup> КНДІСЕ: Міжнародна діяльність. URL: <https://kndise.gov.ua/mizhnarodna-diyalnist/>

its shortcomings and gaps; identified key directions for the development of legislation on forensic expertise to improve the procedures and methods of conducting forensic examinations; investigated the legal status of a forensic expert, determined the role and responsibility of forensic experts; revealed topical issues of professional training of forensic experts in the context of updating the legislation on forensic expertise. In particular, the conference discussed the interaction of forensic experts as part of joint investigative teams in the investigation of criminal offenses under martial law, including with the involvement of foreign experts<sup>38</sup>. A forensic expert who plays an important role in conducting individual investigative (search) actions, first of all, examining the scene of an accident. Thus, actions to prepare objects of potential forensic examinations, which begin at the stage of conducting an inspection of the scene of mass death of people, affect the implementation of identification, diagnostic, situational and reconstructive tasks. The tasks of identifying persons involved in the commission of criminally illegal acts and their subsequent procedural identification on the grounds of appearance, which occurs by conducting forensic portrait examinations and examinations based on video recording materials, become relevant. Quite often there is a need to identify a person based on the materials of the video recording. In this aspect, it is important to emphasize the need to borrow proven international experience and ways to implement it in forensic expertise at the national level, as well as the use of modern software technologies.

One of the key problems that arises when conducting forensic examinations in such territories is ensuring the safety of experts and material evidence. After all, in such conditions there is a high risk to the life and health of people, so it is necessary to take measures to ensure safety during expert examinations (for example, escorting special patrols, using protective equipment)<sup>39</sup>. Another difficult aspect is limited access to research objects in such territories of Ukraine. This may make it difficult to conduct expert examinations and obtain the necessary

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<sup>38</sup> Васюта Ю. Взаємодія судових експертів зі спільними слідчими групами під час розслідування кримінальних правопорушень. *Актуальні питання судової експертизи і криміналістики* : зб. мат-лів міжнар. наук.-практ. конф. з нагоди 100-річчя від дня народження М. С. Романова (Харків, 17.05.2024). Харків : ННЦ «ІСЕ ім. Засл. проф. М. С. Бокаріуса», 2024. С. 54–55.

<sup>39</sup> Груздова В. Специфіка проведення судових експертиз на територіях, де ведуться (велися) бойові дії. *Актуальні питання судової експертизи і криміналістики* : зб. мат-лів міжнар. наук.-практ. конф. з нагоди 100-річчя від дня народження М. С. Романова (Харків, 17.05.2024). Харків : ННЦ «ІСЕ ім. Засл. проф. М. С. Бокаріуса», 2024. С. 76–77.

information to investigate criminal cases. It may also be necessary to cooperate with local authorities, which requires additional time and resources. One of the basic principles of conducting forensic examinations in the territories where military operations are being conducted (conducted) or temporarily occupied is the independence and objectivity of expert research. This is necessary to ensure a fair trial, identify the perpetrators and prevent possible errors or distortions of facts. The independence of expert research involves defining clear procedures for monitoring and supervising the conduct of expert examinations, as well as attracting independent experts and monitoring the results. Conducting forensic examinations in territories where military operations are being conducted (conducted) or temporarily occupied by the Russian Federation is a complex task that requires a special approach and taking into account the specifics. It is necessary to ensure the safety of participants in expert proceedings, not to lose material evidence. As well as provide access to the objects of research and guarantee the independence and objectivity of expert research in order to ensure an objective study of the collected evidence base by the court in the future.

Today, it is often necessary to conduct expert examinations without examining the objects of research<sup>40</sup>. In accordance with the Instructions on the Appointment and Conduct of Forensic Examinations and Expert Studies and the Scientific Methodological Recommendations on the Preparation and Appointment of Forensic Examinations and Expert Studies (with subsequent changes and additions) approved by the Order of the Ministry of Justice of Ukraine dated 08.10.1998 No. 53/5, if it is impossible to conduct an inspection of the objects of research, it is allowed to conduct an examination based on the data contained in the provided documents, photographs and other case materials<sup>41</sup>. Namely: when it is not possible to fully inspect the object, if it has been destroyed or it is located

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<sup>40</sup> Бордакова І. Нормативно-правове регулювання та призначення товарознавчих експертиз в умовах воєнного стану. Актуальні питання судової експертизи і криміналістики: зб. мат-лів міжнар. наук.-практ. конф. з нагоди 100-річчя від дня народження М. С. Романова (Харків, 17.05.2024). Харків : ННЦ «ІСЕ ім. Засл. проф. М. С. Бокаріуса», 2024. С. 37–39.

<sup>41</sup> Order of the Ministry of Justice of Ukraine No. 53/5 «On the approval of the Instructions on the appointment and conduct of forensic examinations and expert studies and Scientific and methodological recommendations on the preparation and appointment of forensic examinations and expert studies» (1998, October 08) (as amended by the order of the Ministry of Justice of Ukraine No. 1950/5 dated 2012, December 26). URL: <https://zakon.rada.gov.ua/laws/show/z0705-98#Text>

in the occupied territories, or if a certain period of time has passed since the date of the commission of the criminal offense.

## **CONCLUSIONS**

Attacks on cultural heritage and its connection with national identity politics raise the question of its protection to the level of a national security problem. International approaches to the preservation of cultural heritage, conclusions regarding its importance in the life of society should be included in the Law of Ukraine "On National Security of Ukraine" and the National Security Strategy of Ukraine. Restoration of cultural heritage will become an important task of the state and society after the victory of Ukraine. And now we have to do everything we can to preserve and save our cultural values.

State policy in the field of cultural heritage preservation, in accordance with Ukraine's status as a candidate for EU membership and ratified international conventions, should cover: tangible (movable and immovable), intangible (spiritual), digital, and natural heritage of Ukraine. National criminal legislation should provide for enhanced criminal liability for damage or destruction of cultural values of special and enhanced protection.

The protection of cultural heritage in the conditions of Russian aggression should be based on its importance for the Ukrainian people, in particular as a potential for post-war recovery and sustainable development of the Ukrainian state. The national legislation on the protection of cultural heritage needs to be improved in the direction of implementing the norms of international humanitarian law.

The National Register of Cultural Values of Ukraine, the inventory and mapping of cultural values are important tools for their preservation, verification of cultural values in the context of hostilities, assessment of losses and prosecution for violations of international law by the aggressor party. National databases on cultural heritage should cover all objects as far as possible.

There is an objective need to create a special unit for the protection of cultural heritage in the Armed forces of Ukraine and to train the armed forces in the protection of cultural values. It is urgent to expand the possibilities of cooperation of the Armed forces of Ukraine with international organizations for the protection of cultural heritage and national institutions responsible for their protection.

The use of information and analytical systems and video monitoring technologies by law enforcement agencies of Ukraine is a necessary

condition for ensuring the effectiveness of Investigation and Prevention of criminal offenses in order to protect the culture and cultural heritage of Ukraine in the conditions of martial law and post-war reconstruction of the country. The use of digital technologies and documentation systems will expand the possibilities of timely notification of law enforcement officers about offenses, search and identification of criminals, optimize the process of investigating criminal offenses and bringing those responsible to justice.

## **SUMMARY**

The article is devoted to the study of the possibilities of using digital technologies and innovations in the activities of law enforcement agencies to protect the culture and cultural heritage of Ukraine in the conditions of martial law and post-war reconstruction of the country. The possibilities of such technologies in the activities of both in the process of preventive activities of law enforcement and other bodies to crimes in the field of protection of cultural heritage objects, as well as in the documentation and pre-trial investigation of military criminal offenses are considered. First of all, thanks to these technologies, the possibilities of quickly obtaining and documenting information about offenses are expanded, opportunities for further collection of evidentiary information are provided, and grounds for the next guilty persons to be held accountable are formed. Based on the analysis of world experience in the norms of international humanitarian law for the protection of cultural property, examples of the introduction of the latest digital technologies and systems in law enforcement and human rights activities, the results of specialized scientific research, a systematic approach to the introduction of advanced digital technologies and innovations in the activities of law enforcement agencies for the protection of culture and cultural heritage of Ukraine is proposed. The paper focuses on the issue of interaction between law enforcement agencies and military forces under martial law, as well as the problem of disinformation in social networks and the information space. The author adheres to the position on the need for broad implementation of the norms of international humanitarian law and international law for the protection of cultural property in the National, in particular criminal legislation of Ukraine. Also, it is very necessary to improve the quality of national investigations of war crimes, documentation of war crimes, creation of an evidence base that will effectively defend the interests of Ukraine both in international courts and to administer justice at the national level.

Unmanned aerial vehicles (UAVs) can be successfully used by law enforcement officers to improve the efficiency of detecting, investigating and documenting criminal offenses in relation to the culture and cultural heritage of Ukraine, and especially during martial law. UAVs are successfully used by investigative units during proceedings and aerial support of a wide range of investigative (detective), covert investigative (detective), judicial and procedural actions. In particular, unmanned aerial vehicles are actively used in the following areas: 1) detection and preliminary research of traces and objects – physical evidence, search for people, animals and things in hard – to-reach or dangerous places, including at night and in other unfavorable conditions; 2) photo and video recording of certain circumstances of offenses (sometimes in real time), illegal consequences of the latter, their participants, tools and traces left by them; 3) sampling, fixing and seizure of objects; 4) remote production of investigators (search), secret investigators (search) and judicial actions in an open area and in large-sized premises; 5) iscientific oorganization of the investigator's work; 6) ensuring the personal safety of participants in criminal proceedings; 7) fixing offenders at the scene of the incident, stopping and preventing criminal encroachments; 8) tracking and fixing the location of the suspect or accused<sup>42</sup>. After the start of a full-scale war in Ukraine, unmanned aerial vehicles have been successfully used to record violations of the laws and customs of war. Thus, with the help of UAVs, numerous destructions and facts of violations of the laws and customs of war were recorded at a high level and in detail in the city of Kharkiv in the area of Northern Saltivka<sup>43</sup>.

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<sup>42</sup> Білоус В. Особливості впровадження в криміналістичну практику безпілотних летальних технологій, апаратів і систем. *Теорія і практика*. 2016. № 5. С. 170–175. URL: <http://www.jurnaluljuridic.in.ua/archive/2016/5/39.pdf>

<sup>43</sup> Перша презентація 3D-аеротуру “Північна Салтівка. Констатація”. URL: <https://m.youtube.com/watch?v=uGM11qf8nr8>

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