

DIGITAL TECHNOLOGIES IN CRIMINAL PROCEEDINGS AS A TOOL FOR RESTORING THE RULE OF LAW AND COMBATING CORRUPTION IN POST-WAR UKRAINE

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INTRODUCTION

Ukraine is on the verge of a large-scale and inevitable digital transformation in the justice sector, which aims to radically change approaches to ensuring justice, transparency and efficiency of the judicial system. At a time when the Internet and digital technologies are changing our world, a Europe fit for the digital age is one of the six policy priorities of the European Commission. In March 2021, the Commission proposed the « The Digital Decade» program¹. This program is based on the plan for achieving digital transformation of the EU economy and society «2030 Digital Compass»². Digital compass aims for a secure, human-centered digital ecosystem where citizens gain power and companies thrive on digital potential. Compass points out four main directions for this trajectory: digital skills, secure and efficient digital infrastructure, digital business transformation, and digitalization of public services. This policy agenda is consistent with EU norms and standards to strengthen the EU's digital sovereignty. A number of Budget instruments will support the investment needed to build Europe's digital decade on a solid foundation.

In modern conditions, the European vector of development of Criminalistics and forensic expertise has made it necessary to introduce progressive institutions, use the most effective methods and technologies³. The EU's Eastern Partnership policy sets out new long-term goals aimed at responding to new priorities, strengthening resilience to solving common problems, promoting sustainable development and continuing to deliver concrete results for citizens, one of which is to ensure sustainable digital transformation. Supporting sustainable digital transformation is one of the

¹ Europe's Digital Decade. URL: <https://digital-strategy.ec.europa.eu/en/policies/europes-digital-decade>

² 2030 Digital Compass: the European way for the Digital Decade. URL: <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A52021DC0118>

³ Шепітько В. Ю., Авдеева Г. К., Шевчук В. М., Капустіна М. В., Яремчук В. О., Негребетський В. В., Соколенко М. О., Лугач А. О. Інноваційні методи та цифрові технології в криміналістиці та судовій експертизі. *Питання боротьби зі злочинністю*. Харків : Право, 2024. Вип. 48. С.62-73.

policy priorities identified by the European Commission in the proposal for long-term policy goals of the Eastern Partnership for the period beyond 2020⁴.

The works of such legal scholars as G. K. Avdeeva, V. S. Batyrgareev, D. M. Belov, M. V. Belov, V. I. Borisov, O. M. Borshevskaia, S. S. Voznyuk, T. Ya. Gnidets, V. I. Grishko, Yu. I. Dmitrik, I. V. Zhukovich, I. O. Osnova, K. V. Dubonos, N. M. Dyachenko, V. A. Zhuravel, V. P. Zakharov, A. O. Ignatovich, O. Ya. Kovalchuk, R. S. Kozyakov, V. O. Kononova, T. M. Lemekha, a.m. Lysenko, O. A. Lokhmatov, T. V. Ognevnyuk, O. S. Melnik, A. O. Moroz, I. V. Oleshko, Yu. V. Osadchaya, O. V. Plahotnik, Yu. s. razmetaeva, O. V. rybalsky, V. I. rudeshko, V. I. Solovyov, L. I. Sopilnik, A. V. Stolitny, I. O. Suprun, E. A. Timoshenko, V. I. Teremetsky, 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 others⁵.

It should be noted that the literature sources mainly considered various aspects of the use of individual digital systems and technologies in the activities of law enforcement agencies and criminal proceedings. However, not all existing technologies have been the subject of research and coverage regarding the analysis of evidence, improving the transparency of judicial procedures and improving the efficiency of the judicial process, so the question of studying the possibility of introducing such technologies in activities related to criminal proceedings needs further consideration. Also, in connection with the war in Ukraine, the issue of using the capabilities of electronic judicial technologies and digital evidence in improving the effectiveness of the investigation of war crimes and crimes of aggression in Ukraine is becoming extremely relevant⁶.

In line with the European Commission's proposals for new EU Eastern Partnership Policy Priorities, a strong digital presence in the EU's neighboring countries will contribute to growth and promote sustainable development⁷. In this regard, EU will continue to invest in the digital transformation of partner

⁴ An official website of the European Union. Joint Communication: Eastern Partnership policy beyond 2020: Reinforcing Resilience – an Eastern Partnership that delivers for all. URL : https://www.eeas.europa.eu/eeas/joint-communication-eastern-partnership-policy-beyond-2020-reinforcing-resilience-%E2%80%93-eastern_en.

⁵ Використання технологій штучного інтелекту у протидії злочинності : матеріали наук.-практ. онлайн-семінару (м. Харків, 5 листоп. 2020 р.). Харків: Право, 2020. URL: <https://dspace.nlu.edu.ua/handle/123456789/18957>; Тимошенко Є.А. Правове забезпечення застосування штучного інтелекту в Україні: дис. ... д-ра філософії: 081 «Право» / ДНУ «Інститут інформації, безпеки і права НАПрН України, Київ, 2024.

⁶ Примітка. Стаття написана у межах розробки фундаментальної теми «Пріоритизація та технологізація у кримінальному провадженні у воєнний та повоєнний час», яка досліджується фахівцями НДІ вивчення проблем злочинності імені академіка В. В. Сташиса НАПрН України

⁷ An official website of the European Union. Joint Communication: Eastern Partnership: Commission proposes new policy objectives for beyond 2020. URL : https://ec.europa.eu/commission/presscorner/detail/en/IP_20_452.

countries in accordance with EU legislation and best practices and will support the expansion of highly innovative digital technologies in the region. The EU will continue to support partner countries and promote their cyber resilience.

Theoretical and practical problems of legal regulation of social transformation due to the use of digital technologies, issues of legal support in the field of Social Communications in the context of digital transformation have recently been the subject of scientific discussions. In particular, on November 23, 2023, the III All-Ukrainian scientific and Practical Conference «social and digital transformation: theoretical and practical problems of legal regulation» was held (organized by State Scientific Institution «Institute of information, security and law of the National Academy of Sciences of Ukraine», Research Institute of intellectual property of the National Academy of Sciences of Ukraine)⁸. The conference, in particular, discussed the specifics of legal support for the development of modern information infrastructure of society and problems of legal regulation of public relations in the field of application of Internet of Things technologies. Directions for improving legislation on the protection of human rights in the context of the use of digital technologies are proposed. During the active expert discussion of these issues, the participants of the All-Ukrainian scientific and practical conference noted the following:

the international community associates the success of any social transformation with the implementation of large-scale digital transformations based on the active implementation and use of the achievements of the Fourth Industrial Revolution: Internet of Things technologies; Industry 4.0; artificial intelligence; robotics; Blockchain; Big data; Smart Contracts; social networks and electronic communications; cloud technologies, etc.;

most countries of the world have adopted or are considering the possibility of adopting national strategies for the introduction of IoT technologies; at the same time, about 70 States – national strategies for the development of artificial intelligence and robotics, considering this a basic condition for development;

the issue of organizing proper legal support for the social and digital transformation of society, as well as assigning the task of developing conceptual foundations for the development of legislation to specialized scientific institutions of the National Academy of Sciences of Ukraine and the National Academy of Sciences of Ukraine and the research service of the Verkhovna Rada of Ukraine, is relevant⁹.

⁸ Соціальна і цифрова трансформація: теоретичні та практичні проблеми правового регулювання : матеріали III Всеукр. наук.-практ. конф. (Київ, 23 листоп. 2023 р.). Київ, ДНУ «Інститут інформації, безпеки і права НАПрН України», 2023. 150 с.

⁹ Соціальна і цифрова трансформація: теоретичні та практичні проблеми правового регулювання (2023). С.5.

1. Digitalization of the Judicial System: A Path to European Standards of Transparency and Efficiency

On March 18, 2024, the Cabinet of Ministers of Ukraine approved the Ukraine Facility plan, which will become the basis for the implementation of the program of financial support for Ukraine from the European Union during 2024-2027¹⁰. Accordingly, for the first time, Ukraine has a Comprehensive Economic Development Plan for the next 4 years. It is aimed at creating conditions for economic development and European integration in many areas of the country's life. The plan identifies key reforms and investment areas that can promote sustainable economic growth and attract funding to strengthen the country's growth potential in the medium and long term. It also contains a high-quality system of transparency, audit and control, which will also be strengthened as part of the planned reforms. The Ukraine Facility plan provides for the implementation of structural reforms in the public sector, a number of economic reforms aimed at developing the business climate and entrepreneurship, as well as steps to develop priority sectors that can ensure rapid economic growth. The implementation of the plan will contribute to Ukraine's European integration and further sustainable economic development.

The preparation of the Ukraine Facility plan took place under the leadership of First Deputy Prime Minister-Minister of economy of Ukraine Yulia Sviridenko and the team of the Ministry of economy of Ukraine in cooperation with other ministries and relevant public authorities, as well as in constant consultations with representatives of the European Commission. Representatives of business, public organizations, the parliament, as well as representatives of the regions were also actively involved in the creation of the plan. The Kyiv School of Economics provided analytical and organizational support for the development of the document with the support of UK International Development from the UK government. In total, the plan partially or completely took into account 133 proposals from business representatives and 84 from public organizations.

The procedure for approval of the plan included the following stages: after approval by the Cabinet of Ministers of Ukraine, the text of the plan for Ukraine Facility will be sent for evaluation by the European Commission and approval by the committee of EU member states, after which the Ukraine Facility program will finally enter into force. Thus, on April 15, 2024, the European Commission approved the Ukraine Facility plan and invited the EU Council to adopt the document¹¹. On May 14, 2024, the EU Council adopted implementation decisions, which positively assessed the Ukraine's Facility

¹⁰ Уряд затвердив План для реалізації програми Ukraine Facility (18.03.2024). URL: <https://www.kmu.gov.ua/news/uriad-zatverdyy-plan-dlia-realizatsii-prohramy-ukraine-facility>

¹¹ Мінекономіки: Європейська Комісія схвалила План для Ukraine Facility (16.04.2024). URL: <https://www.kmu.gov.ua/news/minekonomiky-ievropeiska-komisiia-skhvalyla-plan-dlia-ukraine-facility>

plan¹². «The Ukrainian reform and investment strategy offers a solid foundation for rebuilding a more modern and prosperous Ukraine on its way to the EU.» A positive assessment by the European Commission of the plan will pave the way for regular payments under the Ukraine Facility.

In fact, this plan defines the intentions of the government of Ukraine to restore, reconstruct and modernize the country, as well as reform as part of the EU accession process over the next four years. Among the basic reforms, fair justice and the rule of law are provided, which is the basis for compliance with the rules of the game by all participants¹³. The government's goal is to create a judicial system that meets European standards of transparency and efficiency. At the same time, the judicial reform covers 4 points:

- Establishment of a fair selection system for judges;
- Effective and efficient bankruptcy proceedings;
- Evidence-based digital judicial system;
- A professional and accountable prosecutor's office.

The plan specifies the following tasks: to improve the procedure for selecting judges, reform the prosecutor's office and digitalize the judicial system.

The executors are: Higher Qualification Commission of Judges of Ukraine, Ministry of Justice, High Council of Justice, State Judicial Administration, Ministry of Digital Development, Office of the Attorney General with the participation of the Council of prosecutors, Qualification and Disciplinary Commission of prosecutors.

As a result of the judicial reform, the effect is expected: less administrative pressure, higher investor confidence in the state, and increased investment.

The Ukraine Facility plan also provides for 16 investment indicators included in the general list of changes, of which 15 relate specifically to judicial reform. Funding under the Ukraine Facility program directly depends on the implementation of the indicators provided for in the Ukraine Facility plan.

Digitalization of legal proceedings is part of the judicial reform within the framework of the EU initiative for Ukraine – the Ukraine Facility Plan. It is also the fulfillment of Ukraine's international obligations as a candidate country for membership in the European Union.

The introduction of the Unified Judicial Information and telecommunications system (ECITC) promises to change the approaches to the work of courts, make them more transparent, accessible and convenient for all participants in the process. One of the key tasks envisaged within the framework of the Ukraine

¹² Рада ЄС схвалила План для Ukraine Facility (14.05.2024). URL: <https://eu-ua.kmu.gov.ua/news/rada-yes-shvalyla-plan-dlya-ukraine-facility/>

¹³ Ukraine Facility plan (2024). URL: <https://ucci.org.ua/uploads/files/660538ef4bad0109308362.pdf>

Facility Plan is the development of a roadmap for the modernization of the ECITC and its full implementation by the end of 2027.

The Unified Judicial Information and telecommunications system (ECITC) is a large – scale platform designed to automate the work of courts and make the justice process more efficient. In 2023 alone, Ukrainian courts considered more than 3 million cases. It is clear that processing so many documents manually or without integrated digital tools puts a huge strain on the system.

The Unified Judicial Information and telecommunications system allows judges, lawyers and citizens to quickly access case materials, participate in meetings online, and provides information exchange with other state registers.

Statistics on the use of video conferencing by courts indicate a constant increase in the number of remote sessions, which became especially important during martial law:

2020: 103 255

2021: 250 242

2022: 437 147

2023: 904 789

2024: 1 139 292¹⁴.

Thus, from 2020 to 2024, the percentage of video conferencing usage increased by 1003.3% from 2020 to 2024.

The top 5 courts in terms of the number of online court sessions held in 2024 are:

1. Commercial Court of Kyiv – 23,198;
2. Ternopil City District Court of the Ternopil region – 18,426;
3. Vinnytsia City Court of Vinnytsia region – 17,591;
4. Kherson City Court of Kherson region-13,468;
5. Commercial Court of the Odessa region – 13,176.

The use of the videoconferencing module has many advantages, including: saving resources; reducing time; accessibility of the court regardless of physical limitations, geographical distance or bad weather conditions; reducing health risks; recording and documenting for further analysis, viewing or use.

Modernization of the Unified Judicial Information and telecommunications system is not only the development of new technical solutions. It provides for the introduction of new data security standards, improving business processes and creating convenient services for users. But the main thing is transparency and accountability, which are the basis of the reform.

In October 2024, a Project Office for digital development, digital transformation and digitalization of courts, bodies and institutions of the

¹⁴ ТОП-5 лідерів серед судів за використанням модулю ЄСІКС «Відеоконферензв'язок» у 2024 році (20.12.2024). URL: <https://ics.gov.ua/ics/news/novyny/1724463/>

justice system was established under the state judicial administration of Ukraine. Project offices at state institutions are an opportunity to solve strategic tasks, such as the government's digitalization program, Ukraine Facility Plan, Ukraine's obligations to join the EU, and create new IT services for citizens, improve the quality of existing services¹⁵.

At the end of 2024, the state judicial administration of Ukraine developed and submitted for discussion a draft concept for the development of the Unified Judicial Information and telecommunications system (ЄCITC). The document is aimed at automating judicial processes, ensuring the availability of Justice, optimizing budget expenditures and strengthening information protection¹⁶.

Main accents of the concept:

1. taking into account modern challenges in the field of it and the needs of the judicial system.

2. development of an effective digitalization strategy using the experience of international partners.

3. focus on the integrity, sustainability and efficiency of implementing new technologies.

The goal of the concept is to create a well-coordinated system of electronic legal proceedings that will meet modern standards.

The concept defines the need to apply the following set of interrelated principles, which should determine approaches to the design, development and implementation of the updated ЄCITC:

1. Human-centered. The priority in the design and development of the system should be the needs and interests of users, convenience and intuitiveness of the system's user interfaces.

2. Accessibility and inclusivity. The system must comply with the requirements of DSTU EN 301 549:2022 (EN 301 549 V3.2.1 (2021-03), IDT) «Information Technologies. Requirements for the availability of ICT products and services».

3. Unification and unity. The system, as one of the central components of the organization, should use common styles, graphic elements, a single personal space of the user, as well as unified processes, templates, reference books and classifiers to broadcast to users common approaches to organizing work and forming internal culture.

4. High-quality data management. The system must ensure the implementation of the data lifecycle, its accumulation, storage, availability

¹⁵ В Україні створено Проектний офіс з питань цифрового розвитку, цифрових трансформацій і цифровізації судів. Судово-юридична газета. (29.10.2024). URL: <https://sud.ua/uk/news/ukraine/314249-v-ukraine-sozdan-proektnyy-ofis-po-voprosam-tsifrovogo-razvitiya-tsifrovyykh-transformatsiy-i-tsifrovizatsii-sudov>

¹⁶ Держсудова адміністрація представила Концепцію модернізації ЄCITC. Судово-юридична газета.(30.12.2024).URL: <https://sud.ua/uk/news/ukraine/319480-gossudebnaya-administratsiya-predstavila-kontseptsiyu-modernizatsii-esits>.

and reuse, quality, security and integrity, as well as the analysis and creation of new data, in particular, various metrics for measuring the efficiency and productivity of the system, its users, and the performance of functions assigned to the system.

5. Interoperability. The system should have an integration component for automated interaction with other information, information and communication systems and software and technical complexes, which will be one of the factors of continuous development and improvement of the system.

6. Security and reliability. The system must comply with the requirements of the information security legislation and be developed in accordance with the international information security standards of the ISO/IEC 27000 series.

7. Ensuring technological independence from the vendor and developer. When designing and building a system, popular technology stacks should be selected that are widely represented on the market and provide a choice of developers at the stage of tender procedures and provide an opportunity to change the developer at any stage of development.

8. Use of technological heritage. When designing and developing a system, the possibility of using existing functioning services should be taken into account.

9. Saving historical data. The implementation of the new system should ensure the migration of documents and information from existing systems, in particular, so that it is possible to generate analytical and statistical reports according to the previously adopted methodology.

10. Taking into account user behavioral patterns. When designing a system, in order to simplify its implementation and reduce the risk of rejection by users, user habits regarding the navigation of System elements and the use of its functionality should be taken into account.

11. Sufficient backward compatibility. The updated system should provide interaction with elements of the current system in such a way that a certain amount of critical data can be transmitted in both directions, and users can work on both systems for a certain period of time.

12. Increment (step-by-step development and implementation). Given the complexity and multicomponent of the system, the optimal plan for the development and implementation of its elements should be calculated, which should be based on technological consistency, financial efficiency and timeliness of creating public value.

13. Efficiency. When designing, developing, and implementing a system, the possibility of reusing universal system services should be taken into account in order to avoid duplicating the cost of developing the same type of functionality.

14. Expediency and timeliness. It is the value of a particular functionality for courts, bodies and institutions of the justice system, state authorities and society that should first determine the sequence and timing of the development and implementation of such functionality.

15. Assistance representative office. The priority in the design and development of the system should be the functionality of maximum support and support of the user without special training (in most cases – individuals and small businesses) at all stages of procedural interaction with courts, in particular with the use of artificial intelligence.

During the discussion of the draft concept organized within the framework of the USAID Justice For All program, Chairman of the High Council of Justice Hryhorii Usyk noted: «the most important thing that judges and court staff would like to receive from this system is convenience, clarity, accessibility, security and reliability, which will increase the efficiency of Justice. It is important that this system is integrated with other information and telecommunications systems, such as the unified electronic criminal management system «Smereka» and the pre-trial investigation system «E-Case»¹⁷.

2. Digital Tools for Systematization and Remote Access to Court Decisions: Lessons from European Experience

Access to effective justice is crucial for citizens and businesses. From the user's point of view, the system of access to justice is often weakened by a number of aspects, such as formal and expensive legal procedures, long procedural delays, exorbitant costs of using judicial systems, lack of adequate legal information, mostly incomprehensible to ordinary people legal practice, limited knowledge of their legal rights and a weak system of enforcement authorities¹⁸. Therefore, the E-Justice strategy was implemented in Europe. The document was set out in the European Commission's report on the European electronic justice strategy¹⁹.

«E-justice» can be defined as the use of Technology, Information and communication to improve citizens ' access to justice and effective judicial action, consisting of resolving disputes or imposing criminal sanctions²⁰. In 2010, the E-Justice Portal was launched to provide a «single, multilingual, user-friendly access point (“one-stop shop”)” for the entire European e-justice system, i.e. for European and national information websites and / or services²¹.

¹⁷ Відбулося обговорення проекту концепції Єдиної судової інформаційно-телекомунікаційної системи (01.11.2024).URL: <https://hcj.gov.ua/news/vidbulosya-obgovorennya-proyektu-koncepciyi-yedynoyi-sudovoyi-informaciyno-telekomunikaciynoi>.

¹⁸ United Nations Development Program (UNDP) ‘Barriers to access to Justice’ (30.10.2015). URL: <https://www.undp.org/publications/access-justice-practice-note>

¹⁹ An official website of the European Union. Joint Communication: Eastern Partnership policy beyond 2020: Reinforcing Resilience – an Eastern Partnership that delivers for all. URL: https://www.eeas.europa.eu/eeas/joint-communication-eastern-partnership-policy-beyond-2020-reinforcing-resilience-%E2%80%93-eastern_en

²⁰ What is E – Justice? URL: <http://www.legalsl.com/it/what-is-e-ustice.htm>

²¹ Draft Strategy on European e-Justice 2014-2018 (2013/C 376/06) URL: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52013XG1221%2802%29>

The courts of the member states of the European Union (EU) apply and interpret the legislation of the respective member states, as well as EU legislation. It is thus in the interests of citizens and practicing lawyers to have access not only to the case-law of their member state, but also to the case-law of other EU member states. The creation of an e-justice portal for individuals and businesses increases the visibility of European actions and facilitates access to justice. The Website is part of the overall communication policy with key functions, including access to information: ignorance of the rules in other member states is one of the main factors preventing people from defending their rights in another EU country. The portal corrects this by providing European citizens with information in their language about judicial systems and procedures in the EU.

Most EU member states have one or more databases of their courts' decisions and conclusions concerning EU law, national law, and regional and/or local law. The information available on the Internet can sometimes be restricted by certain courts (such as supreme courts) or decisions of a certain type. With the help of search, you can find the judicial practice of member states, either in or you can use one of the European databases. If you select one of the options in the database of member states, the search query will be redirected to the corresponding national page.

The JURE database, established by the European Commission, contains case-law on jurisdiction in civil and commercial matters and on the recognition and enforcement of judgments in a state other than the one in which the judgment was delivered²². This includes case law under relevant international conventions (e.g. the Brussels Convention of 1968, the Lugansk Convention of 1988), as well as the case law of the EU and member states).

The Association of the Councils of State and Supreme Administrative Jurisdictions of the European Union (ACA Europe) provides two databases of case law of member states concerning the application of EU law, called «JuriFast» and «Dec.Nat»²³. The judgments are presented in the original language with a summary in English and French. Database « Dec.Nat » also contains references and analysis of national decisions provided by the research and documentation service of the European Court of justice.

On the website of the network of the Presidents of the supreme judicial courts of the EU, you can find the sites of a number of national databases (as well as some candidate countries) containing the case law of the Supreme Courts of these member states²⁴.

²² Database JURE. <https://eur-lex.europa.eu/collection/n-law/jure.html>

²³ Dec.Nat . URL: <http://www.aca-europe.eu/index.php/en/dec-nat-en>

²⁴ Network of the Presidents of the supreme judicial courts of the EU. URL: <http://network-presidents.eu/rpcsjeu/>

The information portal of the EU agency for Fundamental Rights includes a database of national decisions of courts and special bodies related to issues of discriminatory legislation²⁵.

The CODICES database, created by the Venice Commission at the Council of Europe, contains case law on constitutional issues not only of EU member states, but also of other members of the Council of Europe²⁶.

In addition, the European E-Justice Portal also provides information about the courts of various member states. Many of these courts have a website containing a database of their own jurisprudence²⁷.

Online case law bases of the Federal Republic of Germany.

In Germany, judicial power belongs to the courts; it is exercised by the Federal Constitutional Court, the federal courts and the courts of the 16 states (see Article 92 of the Basic Law of the Federal Republic of Germany).

Since 2010, the Federal Ministry of justice and Consumer Protection has published individual rulings of the Federal Constitutional Court, Federal Supreme Courts, and the Federal Patent Court on the *Rechtsprechung im Internet* website (online judicial practice)²⁸. Interested parties can view this information free of charge.

In addition, the Federal Constitutional Court and other federal courts publish rulings on their websites. This information is available free of charge for non-commercial use. Websites also publish press releases containing information about important cases and their results.

Since the Federal Republic of Germany is a federal state, the states themselves organize the publication of their court decisions. To this end, they have created their own websites, links to which are posted on the *Justizportal des Bundes und der Länder* (portal of federal and State Justice). On the portal <https://e-justice.europa.eu/> the National Case Law Germany section contains 9 links to the *Rechtsprechung im Internet* databases, nine federal courts, and the federal and State Justice Portal:

Federal Constitutional Court, Federal Court of Justice, Federal Administrative Court, Federal Finance Court, Federal Labor Court, Federal Social Court, Federal Patent Court, *Justizportal des Bundes und der Länder* (Federal and State Justice Portal)²⁹.

²⁵ EU Agency for Fundamental Rights. URL: <https://fra.europa.eu/en>

²⁶ CODICES.

URL: <http://www.codices.coe.int/NXT/gateway.dll?f=templates&fn=default.htm>

²⁷ European e-Justice Portal. National case law. URL: https://e-justice.europa.eu/13/EN/national_case_law?GERMANY&action=printMS&member=1

²⁸ *Rechtsprechung im Internet* URL: <http://www.rechtsprechung-im-internet.de/>

²⁹ European e-Justice Portal. National case law. URL: https://e-justice.europa.eu/13/EN/national_case_law

3. Digital Systems and Databases in Forensic Expert Activities: New Opportunities and Perspectives

Based on the study of the practice of forensic electronic systems, it is possible to determine the following main areas of use of electronic information and communication systems in forensic expertise:

- telecommunications systems that provide automation of the activities of courts and pre-trial investigation bodies;
- official electronic databases (registers) of the Ministry of Justice of Ukraine;
- automated workplaces that support the activities of experts of various specialties³⁰.

Official electronic databases (registers) of the Ministry of Justice of Ukraine. Unified and state registers of the information network of the Ministry of Justice of Ukraine are created in accordance with the legislation of Ukraine for the purpose of creating an information fund, information from them is open and posted on the official websites of the Ministry of Justice of Ukraine³¹. The holder of registers is the Ministry of Justice of Ukraine, which maintains and organizes access to registers of the Information Network on the basis of the regulations on the Ministry of Justice of Ukraine, paragraph 4.60³². The administrator of the unified and state registers of the information network of the Ministry of Justice of Ukraine is the State Enterprise is the State Enterprise DP «Natsionalni informatsiini systemy»³³. The State Enterprise DP «Natsionalni informatsiini systemy» («National automated Information Systems», hereinafter – DP «NAIS») was founded by the Ministry of Justice of Ukraine in May 2015. All information on the legal grounds for the functioning of the unified and state registers of the information network of the Ministry of Justice of Ukraine, the conditions for providing access and use of information from them is open and posted on the official websites of the Ministry of Justice of Ukraine and DP «NAIS». Of the 21 registers of the information network of the Ministry of Justice of Ukraine, two directly relate to activities in the field of forensic expertise: the State Register of certified forensic experts and the Register of methods for conducting forensic examinations.

State Register of certified forensic experts. According to Article 9 of the Law of Ukraine “On Forensic Expertise”, forensic experts certified in accordance with this law are included in the State Register of certified forensic

³⁰ Негребський В.В. Електронні реєстри судових експертів: світова практика. Українська поліцейстика: теорія, законодавство практика. 2023. №2. С.35-39.

³¹ Єдині та Державні реєстри. URL: https://minjust.gov.ua/m/str_22253

³² Regulations on the Ministry of Justice of Ukraine. Approved by the government of the Russian Federation. Decree of the president of Ukraine No. 395/2011 of April 6, 2011. URL: <https://zakon.rada.gov.ua/laws/show/395/2011#Text>

³³ DP «Natsionalni informatsiini systemy». URL: <https://nais.gov.ua>

experts. The Ministry of Justice of Ukraine is responsible for maintaining the Register (the Ministry of Justice of Ukraine is the holder of the register). The functions of The Register Holder are assigned to the Department of expert support of Justice, which is responsible for organizational and managerial support of forensic expert activities. The administrator of the registry is the State Enterprise DP «NAIS», which provides technical and technological creation and maintenance of registry software, providing access to registry information, ensuring the safety and protection of data contained in the Registry.

The procedure for forming and maintaining the Register is determined by the procedure for maintaining the State Register of certified forensic experts, approved by Order No. 492/5 of the Ministry of Justice of Ukraine dated 29.03.2012³⁴.

The register is an official electronic database maintained for the purpose of creating an information fund about persons who have received the qualification of a forensic expert in accordance with the procedure provided for by the Law of Ukraine «On forensic expertise»³⁵. The register consists of information about certified forensic experts of the Ministry of Justice of Ukraine, the Ministry of health of Ukraine, the Ministry of internal affairs of Ukraine, the Ministry of defense of Ukraine, the Security Service of Ukraine, the state border service of Ukraine and forensic experts who are not employees of State specialized institutions.

Forensic experts of State specialized institutions are included in the Register on the recommendation of the heads of these institutions or the chairmen of expert qualification commissions who have been awarded the qualification of a forensic expert. Forensic experts who are not employees of State specialized institutions are included in the Register on the basis of the application of a forensic expert and the decision of the Central expert Qualification Commission under the Ministry of Justice to assign the qualification of a forensic expert.

The following information is entered in the Register:

- surname, first name, patronymic (if any) of the forensic expert;
- unique entry number in the Unified State Demographic Register (if any);
- name of the expert Qualification Commission (ECC), date and number of its decision and its concise content (assignment / confirmation / advanced training of a forensic expert, extension of the validity period of the certificate, bringing a forensic expert to disciplinary responsibility), information on temporary termination or resumption of forensic expert activity;

³⁴On approval of the procedure for maintaining the State Register of certified forensic experts: Order of the Ministry of Justice of Ukraine No. 492/5 of 29.03.2012. Verkhovna Rada of Ukraine. URL: <https://zakon.rada.gov.ua/laws/show/z0484-12#n52>

³⁵Inclusion and amendment of the State Register of certified forensic experts. URL: <https://minjust.gov.ua/m/vklyuchennya-ta-vnesennya-zmin-do-derjavnogo-reestru-atestovanih-sudovih-ekspertiv>

number and validity period of the certificate or document confirming the existence of the qualification of a forensic expert (if the issuance of the certificate is not provided, a corresponding entry is made), information on the renewal of the certificate of assignment of the qualification of a forensic expert, invalidity and/or cancellation of the certificate;

type of expertise, index, and type of expert specialty;

place of work, location, official email address and phone number of the forensic expert;

date and number of the order on dismissal of a forensic expert of a state specialized institution.

The registry is posted on the website: <http://rase.minjust.gov.ua/>

In order to protect and preserve information about certified forensic experts included in the register for the duration of martial law, open access to register information was restricted³⁶.

Register of methods of conducting forensic examinations. According to Article 8 of the law of Ukraine «on forensic expertise», resolution of the Cabinet of Ministers of Ukraine dated 02.07.2008 No. 595 «on approval of the procedure for certification and state registration of methods of conducting forensic examinations», methods of conducting forensic examinations (except for forensic medical and Forensic Psychiatric ones) that have passed certification and state registration are included in the Register of methods of conducting forensic examinations. The Ministry of Justice of Ukraine is responsible for maintaining the Register (the Ministry of Justice of Ukraine is the holder of the register). The functions of The Register Holder are assigned to the Department of expert support of Justice. The registry administrator is the State Enterprise DP «Natsionalni informatsiini systemy». The procedure for forming and maintaining the Register is determined by the procedure for maintaining the Register of methods of conducting forensic examinations, approved by Order No. 1666/5 of the Ministry of Justice of Ukraine dated 02.10.2008³⁷.

The Register of methods is an official electronic database maintained for the purpose of creating an information fund on the availability of methods for conducting forensic examinations, which are certified and recommended for implementation in expert practice in accordance with the procedure for

³⁶ To the attention of persons who need information from the State Register of certified forensic experts. (09.05.2022) URL: <https://minjust.gov.ua/news/ministry/do-uvagi-osib-yakipotrebuyut-informatsiyu-z-derjavnogo-reestru-atestovanih-sudovih-ekspertiv>

³⁷ Procedure for certification and state registration of methods of conducting forensic examinations: resolution of the Cabinet of Ministers of Ukraine No. 595 of 02.07.2008. URL: <https://zakon.rada.gov.ua/laws/show/595-2008-п#Text>

certification and state registration of methods for conducting forensic examinations³⁸.

The register is posted on the official website of the Ministry of Justice of Ukraine (<http://rmpse.minjust.gov.ua>).

The methodology of conducting a forensic examination, as well as changes to it, are included in the Register By decision of the Coordination Council for forensic examination under the Ministry of Justice of Ukraine. The Ministry of Justice of Ukraine checks the correctness of their registration within ten working days from the date of receipt of documents for state registration of the methodology (amendments to the methodology) and makes a decision on entering information in the Register.

In accordance with paragraph 10 of the «procedure for maintaining the Register of methods of conducting forensic examinations», the following information is entered in the Register: the registration code of the methodology; the type (subspecies, genus) of expertise or branch of knowledge; the name of the methodology; the name of the state specialized institution or the proper name and surname of a forensic expert who is not an employee of the state specialized institution that is the developer of the methodology; the year of creation of the methodology; the date of decision on state registration of the methodology³⁹.

Here are some examples of electronic registers related to forensic expertise in other countries.

Netherlands register of forensic experts (NRGD) The register started functioning in December 2010 (<https://www.nrgd.nl/>). Registry data is publicly available. Currently, the Register provides an opportunity to find and select an expert candidate in 28 specialties, in particular, DNA analysis, handwriting research, Forensic Psychiatry, Psychology, pathology, drug research, forensic toxicology, weapons research, ballistics, digital (computer-approx. author) Forensic Research⁴⁰.

The Baltic Register of Forensic Science Experts – a unified register of forensic experts covering forensic science experts from Latvia, Estonia and Lithuania, was launched as part of the “Find a Forensic Expert” project (JUST/2014/JACC/AG/E-JU/6963) under the EU Justice Program. The registry is available from three national interfaces:

Latvian interface: <https://eksperti.ta.gov.lv/en>

Estonian interface: <https://kohtuekspert.just.ee/en>

³⁸ Inclusion and introduction of changes in the Register of methods of conducting forensic examinations. URL: <https://minjust.gov.ua/m/vklyuchennya-ta-vnesennya-zmin-do-reestru-metodik-provedennya-sudovih-ekspertiz>

³⁹ On approval of the procedure for maintaining the Register of methods of conducting forensic examinations: Order of the Ministry of Justice of Ukraine No. 1666/5 of 02.10.2008. URL: <https://zakon.rada.gov.ua/laws/show/z0924-08#Text>

⁴⁰ NRGD. Searching in the register. URL: <https://integraties.doclogic.nl/nrgd/nrgdsearch>

Lithuanian interface: <https://ekspertai.ltec.lt/en>⁴¹.

The Unified Register of forensic experts was developed by the Latvian state forensic bureau in cooperation with the Estonian Institute of Criminalistics, the Lithuanian Forensic Science Center and the Lithuanian police. Currently, it contains information about 796 certified forensic experts, both public and private.

The Hungarian register of forensic experts

The Register of forensic experts is maintained by the Hungarian Ministry of Justice. Thus, according to the Hungarian code of Civil Procedure (CPC), a court can appoint an expert from the Register of legal experts, or, in exceptional cases, a special expert (ad hoc expert) can be called if an expert examination is required to determine the boundaries of a dispute or establish a material fact in a case⁴².

The criteria for obtaining the status of a forensic expert are strictly regulated. The selection criteria are regulated by the law on forensic experts. A candidate is appointed by an expert after passing a strict selection procedure, which takes into account, for example, his specific knowledge in the field for which he is applying for accreditation, qualifications, duration of practice and time of nomination of an expert. Skills (branch of special knowledge) are included in the Register. Accreditation is granted in accordance with qualifications and experience.

The rules govern the maintenance of qualifications by a forensic expert. A forensic expert must be trained every two years (this requirement is determined by the ministry's order). If they do not meet the registration conditions and training requirements, the expert may be excluded from the Register of experts.

Foreign analogues of The Register of methods of conducting forensic examinations.

In the United States, there are standards for expert activity that are included in the OSAC Registry. The organization of scientific area committees for forensic science (OSAC) strengthens the use of forensic expertise in the country, contributing to the development and popularization of the use of high – quality, technically sound standards⁴³. These standards define minimum requirements, best practices, standard protocols and other recommendations that help ensure the reliability and reproducibility of forensic analysis results. OSAC, run by NIST (the National Institute of Standards and Technology) is part of the NIST Forensic Program, which was established in 2014 to address the lack of forensic standards in specific

⁴¹ The Baltic Register of Forensic Science Experts launched. URL: <https://e-justice.europa.eu/sitenewsshow.do?init=true&newsId=176&plang=en>

⁴² Civil legal expert examination in Hungary. URL: <https://experts-institute.eu/wp-content/uploads/2012/07/re-16-cahiereuro-hungary-fevrier2018.pdf>

⁴³ ABOUT OSAC. URL: <https://www.nist.gov/organization-scientific-area-committees-forensic-science>

disciplines. OSAC fills this gap by developing proposed standards and sending them to standards development organizations (SDO), which continue to develop and publish them.

OSAC also reviews standards and places high-quality ones in the OSAC registry. Inclusion in this registry indicates that the standard is technically sound and that laboratories should consider putting it into practice. The OSAC registry is a repository of high-quality, technically sound published and proposed forensic standards⁴⁴. These written documents set out minimum requirements, best practices, standard protocols, and other recommendations that help ensure that the results of forensic analysis are valid, reliable, and reproducible. All standards included in this registry have passed thorough technical and quality control by OSAC members, including forensic practitioners, research scientists, statisticians, and forensic experts. OSAC encourages the forensic community to implement these published and proposed standards.

The OSAC registry includes two types of standards:

Published standards. These are fully developed standards that have been published by the standards development organization (SDO).

OSAC Proposed Standards. These are new or revised standards that were developed by OSAC and sent to SDO for further development and publication. These proposed standards have been subject to the same thorough technical review as the published standards in this registry. To help fill the standards gap during the time it takes for SDO to complete the standards development process, OSAC encourages the forensic community to implement these high-quality standards. The proposed OSAC standard can be revised during the SDO development process, and once it is available, the published SDO standard will replace the proposed OSAC standard in the registry.

As of February 28, 2025, the OSAC registry contains 225 forensic standards (152 published and 73 proposed OSAC standards) representing the following disciplines: Anthropology (Антропология), Biology/DNA (Біологія / ДНК), Bloodstain Pattern Analysis, Crime Scene Investigation, Digital Evidence, Dogs & Sensors, Facial Identification, Fire & Explosion Investigation, Fire Debris & Explosives, Firearms & Toolmarks, Footwear & Tire, Forensic Document Examination, Friction Ridge, Gunshot Residue, Medicolegal Death Investigation), Odontology, Seized Drugs, Toxicology, Trace Evidence, Video/Imaging Technology & Analysis, Wildlife Forensics, Interdisciplinary.

⁴⁴ OSAC Registry. URL: <https://www.nist.gov/organization-scientific-area-committees-forensic-science/osac-registry>

CONCLUSIONS

The use and implementation of modern information technologies in the process of criminal proceedings is a necessary condition for improving the justice system, restoring the rule of law and fighting corruption, improving the efficiency of justice in the digital age, ensuring proximity to users of judicial services, overcoming the consequences of war and post-war reconstruction of the country.

The conducted research allows us to determine the priority directions for introducing innovations and modern information technologies in the process of criminal proceedings:

- modernization and improvement of the Unified Judicial Information and telecommunications system (ЄCITC);

- implementation of situational analysis and management decision systems; legislative, institutional and its changes are needed;

- implementation of new data security standards, ensuring IT security; creating user-friendly services;

- ensuring interaction of the ЄCITC with other relevant state institutions and state registers.

- ensuring interaction with the system of forensic expert institutions of Ukraine.

In the system of State specialized forensic expert institutions of Ukraine, information technologies and databases in the process of criminal proceedings are widely used in forensic activities, in particular during international information interaction in the field of expert information, forensic evidence databases, when conducting certain types of high-tech expert research, in automated forensic records of the expert service of the Ministry of internal affairs.

The improvement of the Unified Judicial Information and telecommunications system will not only optimize and speed up the conduct of judicial procedures, but also make the judicial system accessible and transparent, which in turn will help to increase confidence in the judiciary. The use of digital technologies and systems will improve the quality and validity of court decisions, increase the transparency of judicial procedures and the effectiveness of the judicial process, and optimize the process of preparing and reviewing criminal proceedings. Digitalization of legal proceedings is included in the state Anti-Corruption Program and should help reduce corruption risks. Digitalization of the judicial system is an important step towards our country's integration into the European Space.

ABSTRACT

The article is devoted to the study of the possibilities of introducing modern information technologies in the process of criminal proceedings in order to improve the quality and validity of court decisions, increase the transparency of judicial procedures and the effectiveness of the judicial

process, including the use of automated systems, digital databases, technologies for analyzing evidence, attracting experts, and other innovative approaches. The experience of leading European countries in using such technologies is considered. First of all, these technologies improve the quality and validity of court decisions, ensure transparency of judicial procedures and the effectiveness of the judicial process, and ensure proper trust in the judicial system on the part of society. Based on the analysis of axiological aspects of the introduction of information technologies and remote proceedings in the world, examples of implementation, results of specialized scientific research in this area, it is concluded that the use of digital technologies and systems will improve the quality and validity of court decisions, increase the transparency of judicial procedures and the effectiveness of the judicial process, optimize the process of preparation and consideration of criminal proceedings. Digitalization of the judicial system is necessary as a tool for restoring the rule of law and fighting corruption now and during the post-war reconstruction of Ukraine, and is also an important step towards our country's integration into the European Space.

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