



## To the questions on implementation of modern technologies for expertise

Guzalkhon AKHMEDOVA<sup>1</sup>, Olesya TSURLUJ<sup>2</sup>

Tashkent State University of Law  
Russian State University of Justice

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### ABSTRACT

The article deals with the tendencies of expert activity and the use of information technology in the investigation of crimes. The author considers the effectiveness and some shortcomings in the use of technologies in forensics. By analyzing the diversity of considered areas of forensic science activities that require innovative approaches, in conjunction with a number of raised issues to prove the actuality of the topic.

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## Sud ekspertizasiga zamonaviy texnologiyalarni joriy etish masalalari

### ANNOTATSIYA

**Kalit so'zlar:**

kriminalistika,  
ekspertiza,  
texnologiya,  
tergov,  
dalillarni o'rganish.

Maqolada jinoyatlarni tergov qilishda ekspert faoliyati va axborot texnologiyalaridan foydalanish tendensiyalari ko'rib chiqiladi. Muallif sud ekspertizasida texnologiyalardan foydalanishning samaradorligi va ayrim kamchiliklarini tahlil qiladi. Nostandart yondashuvlarni talab qiluvchi sud ekspertisasi faoliyatining ko'rib chiqilayotgan sohalarining xilma-xilligini tahlil qilish orqali ko'tarilgan savollar soni bilan birga mavzuning dolzarbligi isbotlanadi.

<sup>1</sup> DSc, Associate Professor, Criminalistics and Expertise department, Tashkent State University of Law.

<sup>2</sup> Candidate of legal science, Associate Professor, Expertise and Criminalistics Department, Russian State University of Justice.

## К вопросам внедрения современных технологий в судебной экспертизе

### АННОТАЦИЯ

**Ключевые слова:**

криминалистика,  
экспертиза,  
технологии,  
расследование,  
исследование  
доказательств.

В статье рассматриваются тенденции экспертной деятельности и использования информационных технологий при расследовании преступлений. Автор рассматривает эффективность и некоторые недостатки использования технологий в криминалистике. Путем анализа многообразия рассмотренных направлений криминалистической деятельности, требующих нестандартных подходов, в совокупности с количеством поднятых вопросов доказывается актуальность темы.

New technologies have become an integral part of our society. Modern technologies have entered every field, such as, accounting, architectural activity, construction, engineering activity and forensic science. In order to achieve the objectives of examination of evidences, the most serious requirements are set before the experts, which are aimed at introducing the latest technologies. Traditional processes in technique of general photography is being replaced by digital technologies, which expands significantly the possibilities of investigation and research [1].

The use of modern technology has become a necessity, we can see that technology has led to an increase in a number of crimes and new types of crimes have appeared that require new research methods. These types of crimes include, for example, cybercrime, the investigation of which requires the introduction of modern technologies. However, doubts about digital evidence appear long before the trial begins. As more business audits and legal investigations grow, they include evidence from digital devices such as computer hard drives, personal digital devices, and cell phones. When it is known that digital data must be used during an investigation experts must carefully identify, collect, store and verify relevant evidence [2]. The advantages of using the latest technologies in the field of forensics are enough.

It should be noted that, firstly, they significantly save experts' time. Let us give an example based on a forensic technical examination of documents. One of the main tasks, in this case, is to establish the authenticity of a document or its details. In this case, the main task is to establish the authenticity of the document. It is not difficult to determine whether a document or details is genuine or fake. For this, for example, you can use a device such as Regula 4308, which can solve this issue without much time. Before the advent of this kind of technology, forensic experts needed a considerable amount of time to solve this problem.

M. Vasilyeva, A. Lebedeva consider innovative technologies in professional activities of persons providing operational support and disclosure, investigation, prevention of crimes, as well as subjects of criminal process, implementing auxiliary functions of collecting, researching and evaluating material evidence and traces of criminal activity, allow significant in a way facilitate the process of establishing the truth in the case, qualitatively modernize the process of proving, exposing the perpetrators of crime, ensuring the protection of witnesses [3].

However, with all advantages of digital technologies, some scientists and forensic practitioners come to the conclusion about the shortcomings of digital forensics. Thus, the Indian specialist Krati Jain notes that when applying the methods of digital forensic examination, specialists face a number of serious problems in their practical implementation. Accordingly, outstanding problems can be divided into three main groups. These are technical issues, for example:

- those related to different types of storage media, encryption, steganography, digital forensics countermeasures, real-time data collection and analysis;
- legal issues – for example, jurisdictional issues, confidentiality and privacy concerns, lack of standardized international law;
- resource issues – related, for example, to big data, with the time required to collect and analyze storage media [4].

Thus, in forensic automotive technical examinations, satellite data are already using objects in cases where well-known method for determining speed of vehicle cannot be applied, since there were no signs of braking at the scene of accident, but the car was equipped with anti-theft satellite tracking system. With the help of satellite data, the expert was able to determine the speed of car at the time of the accident [5].

In conducting this type of examination, it is advisable to use digital technologies. The fragments received for examination have to be scanned and the image fragments are examined using the Adobe Photoshop package designed for processing raster images. With this approach, a number of problems are immediately solved:

- work is carried out not with real objects, but with their virtual copies, which eliminates the possibility of accidental damage or loss of objects (in turn, the inconvenience of storing results is also eliminated);
- work with objects of small size is simplified (with traditional form, on the contrary, it is very difficult to work with objects of small size);
- it is possible to cancel an incorrect action without losing the accumulated results.

In other words, the conclusion is drawn that the use of digital technologies simplifies the work of expert, and also ensures the complete safety of object of the research. When using digital photography, laboratory processing is eliminated, the amount of consumables used and time spent on making photographs are reduced. The resulting images can be easily and quickly edited, printed, copied without loss of quality, sent over digital communications networks.

From the point of view of proof, digital evidence is compared to physical (traditional) evidence has a much wider scope. They have characteristics of sensitivity and mobility, and the processes of collection, inspection, storage and evaluation are special requires preparation and tools [6].

Yu.S. Izotova notes that every year the range of computerization of expert research is steadily expanding. Thus, it is possible to reduce significantly time of analyzes, increase their accuracy and reliability. Software complexes for automated solution of expert problems have been developed. Such computer systems include:

- “Dagger” in examination of edged weapons;
- “Evrika” in fire-technical expertise;
- “Balex” in ballistics;

“Narcoex” in study of narcotic drugs and many others. Developed and put into practice “AWP (Automated workstation of a forensic expert – an individual set of hardware and software) handwriting expert” and “Workstation of an auto technician expert” [7].

The diversity of tasks of forensic support of scene, the use of technical forensic and tactical-forensic means in the conduct of this investigation, as well as diversity of work performed under these conditions implies the existence of a system of criteria for evaluating the effectiveness of such supply [8].

Since computers, their networks, information content themselves have become objects of criminal encroachment, the investigation of such cases is impossible without the use of new information technologies. In addition, the advantages of using digital technologies in information processing, according to T. Varfolomeeva, are that electronic photography of country information fund allows storing information in computer memory, copy it instantly and transfer it over communication lines to any consumer [9].

The content of information in the form of digital code allows its processing, while at the same time making it impossible to detect technically falsifications and link a digital image to specific camera. In the aspect of crime investigation, there are many examples of the use of digital technologies in various categories of crimes under consideration.

But summing up the foregoing, we can conclude that the need for the introduction of digital technologies is due to expansion of a number and complexity of the tasks facing forensic science and forensics, and advantage in using technology, in our opinion, reduces mainly the amount of paper workflow, ensures efficiency of actions, as well as through their implementation and improve special knowledge of experts and forensic specialists.

The international community of forensic experts has identified the main areas of activity aimed at achieving a high quality of forensic expert opinions and, in general, forensic science activities, standardization of forensic science activities, validation of forensic science methodologies, accreditation of forensic science institutions and laboratories.

At present stage of development of institute of forensic examinations, the use of unified certified methods of examination makes it possible to establish uniform qualification requirements for forensic experts with different expert specialties, regardless of their departmental affiliation, which, in its turn, helps to obtain results comparable with specified accuracy in conducting a forensic medical examination and expertise [10].

Consequently, we come to the conclusion that general methodological unity in organization and conduct of forensic examinations can improve significantly the efficiency and quality of the results of certain categories and types of examinations and expert studies. Therefore, the object of standardization can be any methodological materials for conducting forensic examinations, methods and means of forensic medical research, as well as competence of certain categories of forensic experts.

#### REFERENCES:

1. Mulenkov D.V. Some aspects of procedural and technical fixation of the results of the use of digital photography in the investigation of crimes // Siberian Legal Review. 2010.
2. B. Atakulov, A. Baratov. Legislation and practice of foreign countries in the field of digital forensics. Society and innovations. Special Issue – 02 (2022). – P. 559.
3. <https://legaldesire.com/>.
4. Vasilyeva M.A., Lebedeva A.A. Forensic aspects of the use of digital methods of fixing traces in investigation of crimes Criminal law and criminology; criminally-executive law, – P. 219.
5. Varfolomeeva T.V. Derivative material evidence. M.: Yurid. lit., 1980.

6. Karimov B. Scientific and theoretical questions of the category of digital evidence // Review of law sciences. 2020. No. Special issue.

7. Izotova Yu.S.. New information technologies in forensic science. FGBOU in “Saratov State Law Academy” Interregional Law Institute

8. Abdullaev R.K. Some views on the concepts of efficiency and effectiveness of criminal supply of scene investigation // Herald pedagogiki. Nauka i Praktyka. – 2022. – Т. 2. – №. 1.

9. Neretina N.S. Innovative technologies in forensic science, Vector of legal science, Bulletin of the O.B. Kutafin, 2022.

10. Ganiev O. Issues of standardization of forensic examinations in Uzbekistan. Zhamiyatvainnovationlar – Society and innovations Issue – 2 No6 (2021) / ISSN 2181-1415. – PP. 177–181.