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## **МЕТОДОЛОГІЧНІ ПРОБЛЕМИ ФОРМУВАННЯ ПОНЯТІЙНОГО АПАРАТУ КРИМІНАЛІСТИЧНОЇ ІННОВАТИКИ**

**Анотація.** *Стаття присвячена проблемі формування понятійного апарату криміналістичної інноватики як нового наукового напрямку у криміналістиці. Досліджуються методологічні проблеми розроблення та формування категорій та понять розглядуваної наукової концепції. Обґрунтовується, що рівень сформованості та обґрунтованості будь-якої наукової теорії, у тому числі і криміналістичної інноватики, визначається ступенем і рівнем розробленості її теоретико-методологічних засад та категоріально-понятійного апарату цієї теорії, зокрема, таких понять, як криміналістична інновація, інноваційний криміналістичний продукт, їх функції, класифікації, стадії інноваційного процесу та ін. Проведено аналіз наукових підходів до розуміння основних категорій розглядуваної наукової концепції, якими є інноваційний криміналістичний продукт та криміналістична інновація. Запропоновано їх визначення, виокремлено суттєві ознаки та властивості, проаналізовано співвідношення цих понять. Аналізується загальний і універсальний діалектичний метод сходження від абстрактного до конкретного і від конкретного до абстрактного, розглядається їх роль у формуванні понятійного апарату криміналістичної інноватики. Зазначається, що методологічним підґрунтям розроблення і впровадження інноваційних криміналістичних продуктів та застосування криміналістичних інновацій у правозастосовній діяльності виступають також діяльнісний, системно-структурний і технологічний підходи, використання яких є перспективним у дослідженні як основних понять криміналістичної інноватики, так і для розроблення цієї криміналістичної теорії. Сформульовано пропозиції та авторське бачення щодо вирішення окремих дискусійних питань, пов'язаних із інноваціями у криміналістиці та правозастосовній практиці. Обґрунтовується, що комплексний підхід у розробленні та формуванні основних понять та категорій криміналістичної інноватики є методологічним фундаментом для подальших досліджень цієї проблематики, який визначає перспективні напрямки розвитку криміналістичної науки.*

**Ключові слова:** новітні тенденції, всесвітній науково-технічний прогрес, правозастосовна діяльність, протидія злочинності, технологізація.

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## **METHODOLOGICAL PROBLEMS OF THE CONCEPTUAL FRAMEWORK DEVELOPMENT FOR INNOVATION STUDIES IN FORENSIC SCIENCE**

**Abstract.** *The paper investigates the development issues associated with the conceptual framework of the innovation studies in forensic science as a new research area in forensic science. The author studies the methodological problems of developing and grouping categories and concepts of the subject matter. It is substantiated that the level of development and validity of any scientific theory, including the innovation studies in forensic science, is determined according to the degree and level of development of its theoretical and methodological principles and the framework of categories and concepts of this theory. In particular, this refers to such concepts as forensic innovation, innovative forensic product, their functions, classifications, stages of the innovation process, etc. The study analyses the scientific approaches to understanding the basic categories of the matter under consideration, which are innovative forensic product and forensic innovation. The author offers their definitions, describes essential features and properties, and analyses the correlation of these concepts. Furthermore, the author analyses the general and universal dialectical method of rising from the abstract to the concrete and from the concrete to the abstract, including their role in the development of the conceptual framework of innovation studies in forensic science. The study notes that the methodological framework for the development and implementation of innovative forensic products and the application of forensic innovations in law enforcement also includes activity-based, system-structural, and technological approaches, the use of which is promising both in the study of basic concepts of innovation studies in forensic science and in the development of this forensic theory. The author articulates proposals and individual insights in the solution of particular debating points associated with innovations in forensic science and law enforcement practice. The study substantiates that a comprehensive approach to the development of basic concepts and categories of innovation studies in forensic science constitutes a methodological foundation for further research on this subject, which determines the promising areas for the development of forensic science.*

**Keywords:** emerging tendencies, global scientific and technological progress, law enforcement, crime prevention, technologisation.

### **INTRODUCTION**

In modern reality, the aggravation of socio-economic and political problems in society, along with the tendencies emerging in global scientific and technological progress, have led to changes in quantitative and qualitative indicators of crime, as well as to new negative manifestations in its dynamics and structure. Such circumstances have posed new challenges to forensic science, which are related to the so-called social procurement of practice, aimed at actively seeking effective means, techniques, and methods to combat modern challenges of crime. In this regard, the creation and introduction of innovative forensic products in law enforcement, as noted in the literature [1; 2], currently constitutes one of the priority tasks of forensic science and urgent necessity for practice.

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To successfully solve this and other issues, forensic science integrates and synthesises modern advances in science and technology [3; 4]. As V.Yu. Shepitko notes, in modern conditions of development of forensic science, this process depends on scientific and technical progress of the human society. The development of forensic science and its tendencies are conditioned by the influence of global information flows, the integration of knowledge about the possibilities of combating crime by means of the scientific and technological achievements of modern society. The computerisation of the social environment has led to the “technologisation” of forensic science, the development and implementation of information, digital, telecommunication, and other technologies. In this regard, radical changes are currently underway and innovative approaches are being introduced in the forensic support of law enforcement agencies [5].

In such modern realities, forensic science should intensify its prognostic function and methodologically ensure the process of criminal proceedings with forensic recommendations for the effective use of modern innovative technologies in pre-trial investigation and legal proceedings. Admittedly, the planning and implementation of the innovation process, which involves the development, implementation, and application of innovations can be ensured to the fullest only with an integrated approach and in such unity and interrelation of the emerging and solved tasks. Furthermore, without innovative technologies and the latest tools to solve organisational, legal, scientific and technical issues of development and implementation of forensic methods, tools and recommendations, such support of law enforcement agencies will not meet the requirements of efficiency [6]. In this regard, a whole host of issues in forensic science requires a critical scientific reinterpretation, and in some cases a revision. This refers to the issues concerning the study of innovative principles of forensic science and the practice of development and implementation of forensic innovations in law enforcement to improve the efficiency of the latter.

In this regard, the study of methodological problems of developing the conceptual framework of innovation studies in forensic science as a new scientific concept becomes of particular importance. To solve this problem, the scientific approaches to understanding the main categories of the studied scientific concept must be analysed. This concerns such categories as innovative forensic product and forensic innovation. Being based on methodological principles, the solution of the said problem necessitates an in-depth study and development of these concepts, highlighting their essential features, properties, as well as their correlation. This comprehensive approach constitutes the methodological foundation for further research on this subject, which, in turn, identifies promising areas of research in forensic science.

## **1. MATERIALS AND METHODS**

To study the methodological problems of developing the conceptual framework of innovation studies in forensic science and to outline the main categories of this scientific concept, a set of scientific methods and practices of their application was used. Thus, the study used philosophical approaches, general and special scientific methods of scientific knowledge, as well as scientific provisions of the general theory of forensic science, which analysed the different approaches to the interpretation of innovative product in forensic science, as well as of such phenomenon as forensic innovation, highlighted their

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advantages and disadvantages. Therewith, the study and analysis of literature demonstrates that forensic science has a different understanding of innovative forensic products and forensic innovations, sometimes offering various pseudo-innovations that are questionable and do not meet the requirements of either innovative forensic products or forensic innovation. In this regard, an important task at hand is the problem of developing and unifying the framework of categories and concepts of forensic science in this subject area.

The author applies a dialectical method, which is used at all stages of this study to discover the essence of such forensic categories as innovative forensic product and forensic innovation, to outline their features and properties, determine their interrelations, interdependence, mutual influence, and correlation. The general and universal dialectical method of ascent from the abstract to the concrete and vice versa was used to develop and form the basic concepts of this scientific concept, their role in the development of such forensic categories and concepts is considered. The Aristotelian method was used to analyse the corresponding concepts and categories, formulate conclusions and recommendations on the methodological foundations of the development of concepts and categories of innovation studies in forensic science and their use in law enforcement practice. Categories and methods of formal logic have been widely used in the study: concepts, definitions, proofs and refutations, judgments, analysis, synthesis, comparisons, generalisations, etc. The study also employed other methods conventional for forensic and legal sciences.

The method of analysis and synthesis allowed to conclude that the development of basic concepts and categories of forensic innovation should involve application of a comprehensive approach that includes a system of general and special scientific methods of scientific knowledge, as well as scientific provisions of general forensic theory. Consideration of such provisions and various aspects in the development of scientific understanding of the basic concepts of forensic innovation should also be based on system-structural, technological, activity-based, and functional approaches, which comprise the methodological foundation for the creation of preconditions for a separate forensic theory development [7].

## **2. RESULTS AND DISCUSSION**

### *2.1 Discussion problems of the methodology of development of the conceptual framework of innovation studies in forensic science*

In the doctrine of forensic science and practice of combating crime, the problems of development, implementation, and application of innovations in practice have always been and remain one of the priorities of forensic science. Therewith, in modern realities there is a host of debatable problems in this subject area, especially with regard to research of innovative products in forensic science and issues of their introduction in practice of the investigative, judicial, and forensic activities. Methodological problems of the establishment, development, and unification of the framework of categories and concepts of forensic innovation as one of the emerging research areas in forensic science require a separate in-depth study, critical analysis, and further scientific developments.

Innovation studies in forensic science is a rather broad, complex concept, which, on the one hand, includes a set of innovative forensic tools and methods of their use for

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collecting, researching, evaluating, and using evidence, and the activities of evidence to create appropriate conditions for effective use of these tools in law enforcement practice. On the other hand, it constitutes a system of scientific provisions that study the patterns of such innovation (including the impact of criminal activity), the results of which are aimed at solving practical tasks in the application of forensic innovations in law enforcement. As is evident, forensic innovation should be considered as *a research area*, as well as *a specific activity* of the subjects authorised by law. As a new research area in forensic science, innovation studies contain a system of theoretical and practical knowledge about forensic innovations, their features, types, role and purpose, stages of development, implementation and application, features of functioning, connections and relations between the subjects of such innovations (developers and consumers). This system is based on the study of patterns of development, introduction, implementation, and application of such innovations, their reflection in sources of information that form the basis of innovative tools, techniques, and methods of collecting, researching, evaluating, and using evidence to optimise, improve quality and the effectiveness of law enforcement practice and the solution of forensic problems [8].

As is known, any scientific theory can be recognised as such only when not only its theoretical foundations are conceptually formed and substantiated, but also its framework of concepts and categories is developed [9]. Therefore, to develop innovation studies in forensic science into a separate forensic theory, it is important to develop concepts and categories of this theory, in particular, such as forensic innovation, innovative forensic product, their functions, classification, stages of innovation process, factors determining the development and use of such innovations and innovative products, etc. As is evident, the main categories of the theory under study are the concepts of innovative forensic product and forensic innovation. In the theory of forensic science and law enforcement practice, the question of the concept of innovative forensic product and forensic innovation and their features remains debatable. Nevertheless, it is obvious that the vast majority of forensic scholars, who studied this problem, define the concept of innovation as the ultimate result of innovative activity, acquired and embodied in the form of *an innovative product* (new or improved) or a new approach to the technological process, decisions, organisation, provision of services, tools for solving problems that are used in practice and aimed at optimising and improving the efficiency of such activities. Typically, such innovations are associated with the creation of a new or improved innovation product in forensics and its implementation in law enforcement. Thus, such product is considered both in narrow, and in wide meaning.

In a narrow meaning, it is a material new product in criminology in the form of *new modern technical means, devices, equipment, tools, and technologies* developed and introduced in practice, which constitute the results of research and development, and the purpose of which is to optimise the investigation and prevention of criminal offenses, to improve the quality and efficiency of investigative activities, significantly reducing errors, effort, and costs. In this case, the innovative product is a *materialised result* of innovative activity in the form of developed and created a new materialised object (product), the future use of which will be aimed at solving certain forensic problems, improving law enforcement. The form of such a developed and proposed innovation is a materialised product, which can include *the latest forensic means, devices, equipment, tools*, etc., i.e.

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materialised objects. As is evident, in this case there is a materialisation of the developed and proposed product, the result of which is embodied in a particular material carrier in the form of new materialised products or material substance that is embodied in products or technology

In a broad meaning, an innovative product in forensic science is a set of materialised and non-materialised new modern methods, techniques, tools, products, technologies, operations, solutions, services, etc., which are developed, proposed, and *implemented and applied in practice* by qualified special subjects, and are aimed at the effective solution of forensic problems, ensuring the improvement of the quality and effectiveness of law enforcement activities. Therewith, non-materialised innovative products in criminology should include new or improved *services, solutions* (technical, tactical, methodical, organisational), the newest approaches to the *organisation of work* of subjects of such activity (investigative, judicial, expert, etc.) which constitute the result of developed and implemented research and development, scientific, and forensic solutions. As is evident, along with materialised objects (means) there are also intangible, in particular such as services, solutions, etc. that can be new (newly created, or newly used, or improved). Practical application of such products is performed by special subjects (investigator, expert, judge, etc.), which ensures qualification and efficiency of their use

The formulation of the definition and essential features of the concept of innovative forensic product involves an analysis of the essence of such a concept, considering its interpretation in the theory of innovation, forensic science and its legislative definition in the Ukrainian legislation. In the explanatory dictionary of the modern Ukrainian language, a product is an object that is a material result of human labour and activity; consequence, product, result of something; a substance obtained or formed chemically or otherwise from another substance; a substance that serves as a material for the manufacture of something [10]. In the theory of innovation studies [11], an innovative product is a research or development of a new technology or product with the manufacture of an experimental sample or experimental batch. In this case, innovation is understood as an ultimate result of innovative activity, embodied in the form of new or improved products (services, equipment, technology, production engineering) of a new or improved technological process, intended for practical use in a particular field of activity to profit, meet needs, and achieve beneficial effect [12].

In accordance with the Law of Ukraine “On Innovative Activities”<sup>1</sup>, an innovative product is the result of scientific and (or) research and development efforts, which meets the requirements set out in Art. 14 of this Law<sup>2</sup>. Notably, according to the legislative approach, only technology or products can be the object of an innovative product. Neither services nor organisational and technical solutions are included in this concept. As is evident, in the domestic legislation, along with innovation, there is another object of innovation – an innovative product which, *in fact, is an intermediate object between a new solution, idea, and the result of its implementation* – the innovation proper. An innovative product is created and exists at the stage of research and development, as it emerges as a result of a set of research and development work to clarify, create conditions, and provide

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<sup>1</sup> Law of Ukraine No. 5460-VI “On Innovative Activities”. (2012, December). Retrieved from <https://zakon.rada.gov.ua/laws/show/40-15>.

<sup>2</sup> *Inbidem*, 2012.

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the necessary form for the implementation of the idea, bringing development to implementation [13]. As noted by Yu.Ye. Atamanova, the concept of "innovation" under Ukrainian law is not connected to intellectual property or to the results of research, which allows for a very broad interpretation of the concept of "innovation". Furthermore, unlike many scientific definitions of innovation, the legal definition does not directly link them to the introduction, use, and commercialisation of newly created intellectual objects, although it is built in such a way that innovation actually recognises the end result of the introduction or implementation of new developments, ideas (products, services, technology, organisational and technical solutions) [14]. Evidently, the imperfection in the defined concepts of "innovation" and "innovative product" significantly complicates the process of creating and implementing innovative forensic products in practice.

In our opinion, different approaches to understanding the "forensic product" among forensic scientists acquire special and methodological significance in the study of this concept. Thus, V.O. Obratsov notes that the concept of forensic product is generic in relation to two types of objects: forensic scientific product and forensic practical product [15]. The first type is the result of research activities in forensic science, which is addressed to investigators, prosecutors, experts, as well as other researchers, persons who teach and study forensic science, based on its use by them in their scientific, educational, or practical criminal procedural activities. The second type is the direct application and implementation of recommendations, tools, and techniques by practitioners in investigative activities [15; 16]. Therefore, the forensic product is considered in two aspects: theoretical and practical. O.Yu. Drozd supports this position, stating that a forensic product constitutes a set of all developments, designs, programmes, technologies that are *products of forensic science, focused on achieving practical tasks* [17]. In turn, M.T. Koilybaiev and Z.R. Dilbarkhanov used the term "product of forensic science" [18].

In view of the above, it should be borne in mind that the forensic product can be considered as: 1) the result of scientific and (or) research and development efforts, which is a product of forensic science, the result of research activities in forensic science; 2) a set of new scientific recommendations, tools, technologies, techniques, methods that derive from forensic science (new tools); 3) the result of a comprehensive process of development, proposal, and implementation by developers (scientists, etc.) and the use of new products in forensic science and practice by consumer entities (investigators, detectives, judges, experts, etc.), i.e. as a result creation of an innovative forensic product.

The study and analysis of the approaches to understand the concept of innovative forensic product, proposed by scholars in forensic science, acquires a certain scientific interest and methodological significance. Thus, N.V. Zhyzhyna, exploring the essence of such innovative products, notes that their use in investigative and judicial practice must meet the following conditions: 1) the use of innovative products in practice must be permissible, while not violating the rights and legitimate interests of citizens, moral, ethical standards; 2) in application it is necessary to ensure the preservation of sources of evidentiary information and the prevention of distortion of fixed information; 3) scientificity and reliability of such products, i.e. the product itself must be based on scientific data, be tested, and if necessary – certified and recommended for practical use; 4) the qualification of the use of such products, which should be carried out by the relevant special entities (investigator, judge, expert, operatives); 4) safety and efficiency of

application of forensic innovative products; 5) it is necessary to reflect the conditions, procedure and results of the use of such products in procedural documents (protocols of actions), etc. [19].

In turn, M.I. Dolzhenko and D.K. Tarianyk, researching this forensic category, note that the result of innovative forensic activity is the creation of an innovative product. Furthermore, such innovation is closely linked to the innovation process of creating, implementing, and applying such a product in practice. According to the authors, an innovative product in forensic science must correspond to the following features: relevance, efficiency, practicality, significance, feasibility, legality [20]. Interesting opinions regarding the understanding of innovative forensic product and innovation were expressed by N.B. Niechaieva [21], according to whom, innovation in criminology should be understood as the *implementation* of such a *component* that differs from the previously used principles of action, intellectual and technological parameters, methods of organisation and management, in order to increase the overall potential of criminal investigation [22]. This refers to creation of innovative forensic products in a broad meaning, as the author notes, precisely "such component" at which such forensic innovation, according to the author, should have certain properties: to be significant and capable of serving the purposes of criminal prosecution; meet the requirements of the law; be timely and easy to use [22].

The analysis of scientific approaches to understanding the essence of the studied categories indicates that the development and formulation of such concepts must consider the methodological principles of this process, among which the main provisions are as follows:

1. Any science or scientific theory can be recognised as such only when not only its theoretical foundations are conceptually formed and substantiated, but also its framework of concepts and categories is developed, which reflects its subject matter. In their unity, concepts and categories form the framework of any science or individual theory. This fully applies to innovation studies in forensic science.

2. The formulation of concepts and categories of science or theory involves a certain procedure and system of methods of scientific knowledge. The essence of this procedure is expressed in the *formalisation of knowledge* about individual phenomena and objects, which lies in abstracting or distracting from insignificant, atypical features and properties of such phenomena, in identifying and fixing patterns of development and in establishing *the most important general (typical) features*, according to which they differ from others.

3. The general and universal method of forming concepts is *the dialectical method of scientific cognition*, which includes the necessary stages of rising *from the abstract to the concrete*, and then – *from the concrete to the abstract*. In this process, the role of logical and epistemological procedures, such as “abstraction-idealisation”, and “abstraction-identification” and the category “concrete” in the development of categories and concepts of the subject matter should be considered [23; 24]. This process also applies to the development of the conceptual framework of innovation studies in forensic science

4. The development of new concepts and categories in forensic science should consider the scientific developments of the studied problematic and requirements for forensic categories and concepts [25; 26], since they, as scientific abstractions, constitute the result of cognitive activity, should reflect the essential aspects and natural connections

of the studied phenomenon, its objects, facts, events in a generalised form, i.e. reflect the essential features of the studied concept. The above provisions form the methodological foundation of such research.

## *2.2 Problems of development of basic concepts of innovation studies in forensic science*

After analysing scientific approaches to understanding the essence of the studied categories of innovation studies in forensic science and clarifying the basic methodological principles of their development, we the concepts of “innovative forensic product” and “forensic innovation” can be developed, with their features characterised. The variety of features of an innovative forensic product, their different interpretations necessitate their classification according to the degree of significance. Considering this criterion, it is appropriate to divide the features into significant and insignificant ones. *Significant* features are those that are reflected in the definition of an innovative forensic product. *Insignificant* features, albeit not included in the content of such a concept, constitute a priori knowledge about them, which determines the essence of this forensic category.

The essential features of an innovative forensic product include the following: 1) scientific and technical *novelty* of such a product, which can be newly created, or newly used, or improved, so this feature is primarily associated with the creation and emergence of new properties of innovative product, improving its parameters and capabilities; 2) such an innovative product is *developed and proposed for practical use*, but so far it *has not been introduced and applied* and it is embodied in the form of a new materialised product or technology; 3) it is developed, *created, and exists at the stage of scientific and research and development efforts*, as it emerges as a result of their implementation so as to *clarify, create conditions, and provide the necessary form for the implementation of the idea and bring the development to implementation*; 4) such an innovative product, in comparison with the already applied innovation, *occupies an intermediate place (is an intermediate object) between the new proposed idea, solution (innovation), and the result of its implementation*, i.e. already applied forensic innovation; 5) *demand in practice and the ability to meet the demands and needs of practice* and individual subjects of their application; 6) *the focus of such a product on the solution of forensic and other tasks* in a particular field of activity or tasks on certain issues or situations of investigation, trial and enforcement; 7) *development and proposal of forensic innovative products for the practical use* is calculated for their further use by special entities (investigator, detective, prosecutor, judge, expert, etc.), which must be qualified and aware of the prospects for their use; 8) a clear focus of such an innovative product on *a lasting positive effect* in the process of its further (possible) application, in particular, such an effect may be to improve the quality and effectiveness of law enforcement activities, its optimisation or solving certain forensic problems, etc. Thus, *an innovative forensic product* is a new product or technology developed and proposed for implementation, which is the result of scientific or research and development efforts, which is designed for their further use by qualified special entities and aimed at solving forensic problems and ensuring optimisation, improving the quality and effectiveness of law enforcement activities.

In this regard, literature notes that innovative forensic products should include developments in forensic techniques, tactics, and methods of crime investigation, namely: newly created or already existing and adapted to the needs of investigative practice forensic

tools, modern information technology, electronic knowledge bases, methods of recording, analysis, and evaluation of evidence, new tactics, their complexes, tactical combinations and operations, algorithms of priority investigative (search) actions and verification of typical investigative versions, methods of investigating new types of crimes, etc. [27; 28]. It is considered that such an approach is reasonable and can serve as a methodological foundation for further forensic research on this subject matter [29]. Clarifying the meaningful understanding of the concept of “innovative forensic product” allows to proceed to the study of such a phenomenon as “forensic innovation”. Evidently, knowledge of the essence of this forensic category involves the study and research of the properties and features of this concept. In this case, the properties should be understood as a quality that is a distinctive feature of the object or phenomenon [30]. The properties of forensic innovation include the following: innovation (novelty), objectivity, subjectivity, purposefulness, demand, practical applicability, efficiency. All these properties fully apply to forensic innovative products, except for one – practical applicability – because only the practical orientation of such a product can be referred to. This means that it has been developed and proposed for practical use, but it has not yet been implemented and used in practice. Furthermore, it is important to factor in that innovative forensic products are embodied only in the form of new materialised products or technology; however, intangible objects (neither services, nor organisational and technical solutions, etc.) are not included in the concept of this product and its understanding [31; 32].

The main essential features of forensic innovation are as follows: 1) the *novelty* of products, technologies, services, and solutions developed, proposed, and implemented in practice, is manifested in the fact that they are associated with the creation and emergence of new properties improve its parameters and features, therefore they are newly created, or newly applied, or improved; 2) the latest technical, tactical, methodological, and forensic tools (innovative forensic tools) *developed, proposed and applied are in demand and are constantly used in practice*, they are embodied in the form of new products, technologies, solutions; 3) the latest technical, tactical, methodical, and forensic tools developed, proposed, and introduced into practice *are the result of scientific or research and development efforts*; new products, technologies, solutions are in demand and applied forms of implementation (application) of such innovative forensic tools; 4) the application of such innovations is *carried out by special subjects* (investigator, judge, etc.), which ensures the qualification and efficiency of the use of innovative tools developed and implemented in practice; 5) the *focus* of innovative tools on the effective solution of forensic problems, ensuring optimisation, improving the quality and effectiveness of law enforcement practice and further innovative development of forensic science. Thus, *forensic innovation* is the latest technical, tactical, methodological and forensic tools developed, implemented, and applied as the result of scientific or research and development efforts, embodied in the form of a new product, technology, service, solutions used by qualified special subjects in practice and aimed at effective solution of forensic problems, ensuring optimisation, improving the quality and effectiveness of law enforcement practice and further innovative development of forensic science.

In this regard, an important area of improvement of the conceptual framework of the studied theory is the clarification and unification of terms, since innovations in forensic science are denoted differently: “innovative tools”, “innovations in forensic science”,

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“innovative technologies”, “innovative forensic product”, “innovations in the methodology of crime investigation”, “innovations in forensic tactics”. It is considered that such terminological discrepancy is associated with the stage of development of the concept of innovation, the development of this category of forensic science, but it negatively affects both their research and the practice of their application. The author believes that the well-established term “forensic innovation” should be recognised as the most successful and optimal for designating the process of development, implementation and application of innovations in law enforcement practice, which corresponds to the above criteria, thereby emphasising its focus on solving the problems of forensic science, obtaining the effect of their practical application and performing functional destination, i.e. ensuring optimisation, improving the quality and effectiveness of investigative, judicial, and expert activities.

## CONCLUSIONS

Thus, one of the promising areas of scientific development in modern forensic science is the research of the problems of innovation study in forensic science as a fairly new scientific concept that is being developed. For its further study it is important to develop a framework of concepts and categories of this theory, in particular, such concepts and categories as forensic innovation, innovative forensic product, their functions, classifications, stages of the innovation process, etc.

The main categories of the studied theory are the concept of “innovative forensic product” and “forensic innovation”. The analysis of the essence of these concepts gives grounds to assert that the innovative forensic product and forensic innovation are separate types of means of innovation studies in forensic science. Firstly, they constitute relatively new, specific activity categories, they reveal the functional side of innovative forensic tools that are used by qualified subjects (investigator, judge, expert, etc.) and are subjects-consumers of such innovations, and on the other hand, this is a development process, proposals and implementation of innovative products, which is carried out by the subjects-developers (scientists, innovators, etc.) in the form of the results of research, experimental, and design developments. Secondly, forensic innovation product and forensic innovation should not be considered as competing forensic categories, but rather as complementary ones, which together create a single, most effective mechanism for obtaining and collecting evidence, optimisation, quality and efficiency of law enforcement and solving forensic problems. However, each of these categories have their own properties, essential features, content, role and purpose and their own tasks in the process of their application in practice.

Successful solution of practical problems of innovation studies in forensic science involves the development of the framework of categories and concepts of this scientific concept and must consider the methodological principles of this process and prospects for development, implementation of innovative forensic products and application of forensic innovations in law enforcement. When developing the basic concepts and categories of this forensic theory should apply a comprehensive approach, which includes a system of general and special scientific methods of scientific knowledge, as well as the scientific provisions of the general theory of forensic science. Considering such provisions and various aspects in the development of scientific understanding of the basic concepts and categories of this scientific concept should be based on system-structural, technological,

activity-based, functional approaches, which constitute the methodological foundation for creating prerequisites for the development of a separate forensic theory – innovation studies in forensic science. Operating with such approaches in the development of the concept of forensic innovation can become a new paradigm of forensic science, capable of raising to a higher theoretical and methodological level of research in this subject area.

## REFERENCES

- [1] Averyanova, T.V. (2015). Innovations in criminalistics and forensic expertise. In: *Criminal procedural and criminalistic problems of struggle against crime: materials of the all-Russian scientific and practical conference* (pp. 11-16). Orel: Lukyanov Orel Law Institute of the Ministry of the Interior of Russia.
- [2] Shepitko, V.Yu., Zhuravel, V.A., & Avdeeva, H.K. (2011). Innovations in criminalistics and their implementation in the activities of pre-trial investigation bodies. *Issues of Crime Prevention*, 21, 39-45.
- [3] Averyanova, T.V., Belkin, R.S., Korukhov, Yu.H., & Rossinskaya, E.R. (1999). *Criminalistics*. Moscow: Norma.
- [4] Cherniavskyy, S., Ortynsky, V., Rohatiuk, I., Udalova, L., & Sirant, M. (2019). Investigation of crimes of an international character. *Journal of Legal, Ethical and Regulatory Issues*, 22(5), 1-6.
- [5] Shepitko, V.Yu. (2019). Problems of optimization of scientific and technical support of investigative activities in the conditions of adversarial criminal proceedings. In: *Academician Stashis Scientific Research Institute for the Study of Crime Problems National Academy of Law Sciences of Ukraine: materials of the scientific conference* (pp. 144-147). Kharkiv: Pravo.
- [6] Yaroshenko, O.M., Vapnyarchuk, N.M., Burnyagina, Y.M., Kozachok-Trush, N.V., & Mohilevskyy, L.V. (2020). Professional development of employees as the way to innovative country integration. *Journal of Advanced Research in Law and Economics*, 11(2), 683-695.
- [7] Kostenko, R.V., & Rudin, A. (2018). Notion and meaning of evidence verification in criminal procedure. *Journal of Advanced Research in Law and Economics*, 9(3), 1011-1017.
- [8] Shevchuk, V.M. (2020). Criminalistic innovation: modern problems of formation and prospects for research. In: *Perspectives of world science and education: abstracts of VIII International Scientific and Practical Conference* (pp. 158-168). Osaka: CPN Publishing Group.
- [9] Zhuravel, V.A. (2018). Individual students in the structure of the General theory of criminalistic. *Theory and Practice of Forensic Science and Criminalistics*, 18, 9-21.
- [10] Busel, V.T. (2005). *Large explanatory dictionary of the modern Ukrainian language*. Kyiv; Irpin: Perun.
- [11] Antonyuk, L.L., Poruchnik, A.M., & Savchuk, V.S. (2003). *Innovations: theory, mechanism of elaboration and commercialization*. Kyiv: Kyiv National Economic University.
- [12] Kuchynska, O., Kashyntseva, O., & Tsyganyuk, Y. (2019). International cooperation in criminal proceedings involving assisted reproductive technologies. *Wiadomosci Lekarskie (Warsaw, Poland: 1960)*, 72(12), 2531-2535.

- [13] Tomkina, O.O., & Yakovliev, A.A. (2018). Issues of the modern constitutional process: the moral foundations of public authority (in the aspect of legal guarantees of democracy). *Journal of Advanced Research in Law and Economics*, 9(7), 2447-2453.
- [14] Atamanova, Ju.Ye. (2008). *Economic and legal support of innovation policy of the state*. Kharkiv: "FINN" Publishing House.
- [15] Obraztsov, V.A. (2007). On the question of paired categories in criminalistic. *Lex Russica (Scientific works: Kutafin Moscow State Law University)*, 4, 75.
- [16] Khalymon, S., Polovnikov, V., Kravchuk, O., Marushchak, O., & Strilets, O. (2019). Forensic economic examination as a means of investigation and counteraction of economic crimes in East Europe (example of Ukraine). *Journal of Legal, Ethical and Regulatory Issues*, 22(3), 1-13.
- [17] Drozd O.Y. (2017). Civil service pattern in Germany and Ukraine: A comparative aspect. *Journal of Advanced Research in Law and Economics*, 8(5), 1503-1507.
- [18] Koilybayev, M.T., & Dilbarkhanova, Z.R. (2020). On the specifics of studying organized crime at the present stage. *Journal of Advanced Research in Law and Economics*, 11(3), 897-904.
- [19] Zhizhina, M.V. (2012). Innovative development of criminalistics at the present stage. *Lex Russica (Scientific works: Kutafin Moscow State Law University)*, 1, 117-125.
- [20] Dolzhenko, N.I., & Taryanik, D.K. (2017). Innovations in criminalistic support of crime detection and investigation: Some problems of implementation and ways to solve them. *Scientific Almanac*, 5-1, 272-277.
- [21] Nechaeva, N.B. (2016). On the issue of new innovative criminalistics products in the investigation of crimes. In: *Current issues of jurisprudence* (pp. 132-134). Yekaterinburg: Innovation Center for the Development of Education and Science.
- [22] Nechaeva, N.B. (2013). Innovations in criminalistics. *Leningradskiy Juridical Journal*, 2(32), 158-159.
- [23] Voitsikhovskiy, A., Bakumov, O., Ustymenko, O., & Marchuk, M. (2019). The legal mechanisms of ensuring regional cooperation in combatting crime within the framework of the Council of Europe: Experience of Ukraine. *Central European Journal of International and Security Studies*, 13(1), 138-160.
- [24] Taran, O., & Sandul, O. (2019). Issue of criminal liability for offences against critical infrastructure objects in nuclear industry. *Nuclear and Radiation Safety*, 3(83), 58-67.
- [25] Motoryhina, M.G., Bepalko, I.L., & Zuiev, V.V. (2019). Legal regulation of cooperation in the field of forensic medical examination in criminal proceedings between Ukraine and the Republic of Poland. *Wiadomosci Lekarskie (Warsaw, Poland: 1960)*, 72(12), 2615-2619.
- [26] Shevchuk, V. (2019). Methodology of criminalistics: Discussions, tendencies, prospects. *Criminalistics and Forensic science: Science, studies, practice: materials of the 15th international congress* (pp. 29-44). Vilnius: Forensic Science Center of Lithuania, Criminalistics Association of Lithuania.
- [27] Lavruk, V.V., Zaporozhets, H.V., Khomutenko, O.V., Dudchenko, A.Yu., Demidova, E.E. (2018). Verification of social and economic determination of crime in Ukraine. *Journal of Advanced Research in Law and Economics*, 9(7), 2363-2371.

- [28] Shepitko, V. Yu., & Avdeeva, H. K. (2018). Innovation in criminalistics. In: V. Yu. Shepitko (Ed.), *Major Ukrainian legal encyclopedia: in 20 volumes* (pp. 337-338). Kharkiv: Pravo.
- [29] Shevchuk, V. (2019). Criminalistic methodology and practical direction of study. In: *Scientific achievements of modern society: abstracts of the 4th International scientific and practical conference* (pp. 932-939). Liverpool: Cognum Publishing House.
- [30] Barash, Ye. Y., Samosionok, A. O., Riabchenko, O. P., Zarubei, V. V., & Minchenko, S. I. (2019). Issues related to increasing the upper limit of the criminal penalties for serious crimes: Social and legal research (on the example of Ukraine). *Journal of Legal, Ethical and Regulatory Issues*, 22(3), 1-20.
- [31] Vilks, A., & Kipāne, A. (2018). Cognitive aspects of criminal justice policy. *Journal of Advanced Research in Law and Economics*, 9(5), 1798-1805.
- [32] Akimzhanov, T., Tleukhan, R., Smatlayev, B., Kairzhanova, S., & Irubayeva, A. (2017). Theoretical and legal basis of conception of organized crime in Modern Era. *Journal of Legal, Ethical and Regulatory Issues*, 20(3), 1-8.

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