
CHAPTER 1

An innovative approach to creating a list of types of forensic examinations and expert specialties

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Abstract

Forensic examination is a rather complex field of activity, characterized by the breadth of specific expertise used and the complexity of research procedures. An accurate "specialty passport" is needed, which describes what this or that examination can do and what it is called. The study uses a system of methods, in particular, general philosophical, general scientific (dialectical, analysis, synthesis, abstraction, analogy), and special legal methods (formal legal, systemic and structural). The methodological basis of the research is the dialectical method of scientific knowledge, which reflects the relationship between theory and practice.

It was found that the existing classification of forensic examinations by the fields of specific expertise used in their conduct is outdated and does not meet the requirements of modernity. This creates difficulties not only for forensic experts and persons who wish to become them, but also for the court, participants in the legal process, and all citizens who are interested in obtaining the opinion of a forensic expert.

It has been established that there is a discrepancy between the types of forensic examination and expert specialties according to which the qualification of a forensic expert is assigned in the departmental lists. This leads to misunderstanding by customers of expert studies of the correspondence of expert specialties and their demarcation.

The appearance as a result of the application of innovative technologies of new objects that did not exist before, or were transformed from already existing ones, contributes to the discovery of new properties and the manifestation of new signs of these properties, which, in turn, leads to the genesis of new expert specialties, species and subspecies, genera, classes of forensic examinations.

It has been proven that the expansion of the sphere of activity of private forensic experts by granting them the right to conduct those forensic examinations, which they do not have the right to conduct today, will allow to create greater competition

between the public and private sectors, improve the quality of expert research, shorten the terms of their conduct, relieving the burden on state forensic expert institutions.

The unification of the interdepartmental approach to the classification of forensic examinations is proposed in order to avoid errors that can cause the issuance of illegal and unfounded court decisions. The issue of unification can be solved by working out a general approach to the classification of kinds and types of forensic examinations with consolidation in an interdepartmental regulatory act, which should be based on the criteria of the general theory of forensic examination. The creation of a unified list by types of forensic examinations and their corresponding expert specialties can be considered a strategic task, which, if successfully implemented, can open up ways to solve many issues facing the expert society.

Taking into account the fact that at the time it is planned to provide opinions by experts in electronic form, the creation of a forensic expert's office and its integration with the Unified Judicial Information and Telecommunication System, the creation of a modern unified list by types of forensic examinations and their corresponding expert specialties is on the agenda.

Keywords

Legal regulation, state specialized institutions, forensic examination, expert specialty, classification of forensic examinations, forensic expert activity, specific expertise.

1.1 Formulation of the problem

Forensic examination is a rather complex field of activity, characterized by the breadth of specialized knowledge used and the complexity of research procedures. This determines the variety of types of forensic examinations, which inevitably raises the question of their classification. Classification is extremely important for forensic examination as a field of practical activity. If in theory we can sometimes afford not to single out separate forensic examinations, then practical activity requires strictness of the name and certainty of the components. A clear "specialty passport" is needed, which describes what this or that examination can do and what it is called.

The classification of forensic examinations as an integrative system structure, which is a complete conceptual formation, all elements of which are inseparable, interdependent relationships with each other, is required for use both in the development of theoretical provisions and in practical expert activity.

During the period of development of the general theory of forensic examination, which came at the end of the 20th – the beginning of the 21st century, a large amount of empirical material was accumulated in certain kinds (types) of examinations, and

on this basis methodological, legal and organizational principles for various types of forensic examinations were developed, common features and signs that should be characteristic of any kind of examination, including newly created ones were determined.

Scientific classifications of forensic examinations have both theoretical and closely related practical significance for the forensic activity itself, as well as for the jurisdictional activity of state bodies and officials. One of the essential grounds for classification is the nature and field of special knowledge, required for conducting an examination of a certain type. Classification of forensic examinations without taking into account such a basis as the nature and field of special knowledge will not be effective enough in modern realities. This is due to the fact that the classification will not be deliberately designed to solve the needs that arise in practice when assigning and conducting a wide variety of forensic examinations. For example, without taking into account the nature and field of special knowledge, it is impossible to determine the competence of an expert who is entrusted with conducting a forensic examination, since it is not known in advance what special knowledge he/she must have to solve the issues before him/her, and, as a result, the correct choice of a forensic institution who has such knowledgeable persons cannot be made.

1.2 Analysis of recent research and publications

The issue of classification of forensic examinations has been considered by scientists for many decades. Practically every scientific study contains various clarifications and details of existing classification structures, or offers completely new ones. Their quality, possibilities of scientific and practical use largely depend on the basic provisions that were used during their development. G. Massonnet, Y. Lim, A. Marolf, N. Estoppey in the field of soil forensics have proposed statistical and probabilistic approaches that help in the determination of relevant variables and subsequently in the construction of various classification models [1]. B. Rappert, H. Wheat, D. Wilson-Kovacs applied rationing classification schemes from health care research to the field of criminology to characterize methods of matching demand with opportunities [2]. V. Fedorenko and L. Tymoschyk offered a classification and general characteristics of the main types of forensic examination on intellectual property [3]. O. Shramko summarized and highlighted various approaches to the classification of examinations in domestic practice [4]. O. Dufenyuk considered the criteria for the classification of forensic examinations in Ukrainian forensic science [5]. A. Polyarush offers criteria for the classification of forensic examinations, which are assigned in the process of investigating crimes related to the illegal circulation of excise goods [6].

1.3 Highlighting previously unresolved parts of the overall problem

At the same time, the increased attention of scientists to the issues of classification constructions in criminology and forensic examination indicates the need for further research and study of existing problems in this field.

1.4 Formulation of the purpose of the article and setting of tasks

A study of the prerequisites, problems and prospects for the creation of a modern unified list of types of forensic examinations and expert specialties, according to which the qualification of a forensic expert is assigned.

The tasks of the research are:

- to find out the classification of forensic examinations on the subject-object-method basis;
- compare the departmental lists of types of forensic examinations and expert specialties, according to which the qualification of a forensic expert is assigned;
- to investigate the differences in the specified lists;
- to propose ways to solve problems in the legal regulation of the classification of forensic examinations.

1.5 Description of the methodology (structure, sequence) of the research

To carry out the research, a system of methods of scientific knowledge was applied, in particular general philosophical, general scientific (dialectical, analysis, synthesis, abstraction, analogy), as well as special legal (formal-logical, formal-legal, comparative-legal, systemic-structural). The methodological basis of the research is the dialectical method of scientific knowledge, which reflects the relationship between theory and practice.

The formal-logical method was applied during the analysis of the content of current domestic legislation in the field of forensic expert activity. Thanks to the comparative legal method, the analysis was carried out and the peculiarities of the normative legal regulation of classification by types of forensic examinations and their corresponding expert specialties were studied.

The theoretical basis of the research is mainly scientific works and conclusions of leading foreign and domestic specialists, devoted to the study of the problems of classification of forensic examinations.

1.6 Presentation of the main material and obtained scientific results

For the purpose of efficient and effective use and application of special knowledge in judicial proceedings, authorized persons, the court, the expert, entrusted with the research, are obliged to adhere to the classification of forensic examinations and distinguish relevant expert specialties. Differences in the nature of research objects and in the tasks of each of the kinds, types and subtypes of examinations should also be taken into account. The name of the forensic examination determines the kind or type of expert examination in accordance with the four-level classification system.

This division of forensic examinations taking into account the tasks they solve (**Table 1.1**) is of significant importance: it helps the person who assigned the examination in the correct choice of the appropriate kind (type) of examination and the addressee of the expert examination; determines the training and retraining of expert personnel, their competence and specialization; helps determine the kinds and types of examinations, the performance of which should be organized in a forensic institution, as well as predict the creation of new ones; facilitates the development of short-term and long-term research plans for the development of the theory and methodology of expert research.

Table 1.1 Classification of forensic examinations on the subject-object-method basis

| | |
|---------------------|---|
| Examination class | Consists of expert studies, which are united by a community of knowledge, which serve as a source of formation of theoretical and methodical foundations of forensic examinations, and objects, investigated on the basis of this knowledge. The division into classes is carried out according to whether the examination belongs to one or related fields of special knowledge that use similar tools |
| Examination kind | Is distinguished by subject, objects and, accordingly, methods of expert research |
| Examination type | Consists of the elements of the kind, which differ in the specificity of the subject in relation to the objects and methods common to the kind |
| Examination subtype | Component parts of a type, distinguished by a peculiar group of tasks characteristic of the subject of this type of examination, and complexes of research methods of individual objects or their groups |

Compiled by the author

The Instructions on the Assignment and Conduct of Forensic Examinations and Expert Research, approved by the Order of the Ministry of Justice of Ukraine dated 08.10.1998 No. 53/5 proposes a unified classifier of the main types (subtypes) of forensic examinations according to a criterion that can be identified as a field of special knowledge.

The following are defined:

1. Forensic: handwriting; linguistic examination of speech; technical examination of documents; examination of weapons and traces and circumstances of their use; traceological (except for studies of traces of clothing damage, associated with the simultaneous infliction of physical injuries, which are carried out in the forensic medical examination office); photo, portrait; examination of holograms; video and sound recording; explosion engineering; man-made explosions; materials, substances and products (paint materials and coatings; polymer materials; fibrous materials; petroleum products and fuel and lubricant materials; glass, ceramics; narcotic drugs, psychotropic substances, their analogues and precursors; alcohol-containing mixtures; soils; metals and alloys and products from them; the presence of harmful substances (pesticides) in the environment; substances of chemical production and special chemicals; food products; potent and poisonous substances); biological.

2. Technical engineering: transport engineering (automotive engineering, tra-ceological, railway); road engineering; construction; construction assessment; land engineering; land assessment; land management; fire engineering; life safety; mining engineering; environmental engineering; electrical engineering; computer; telecom-munications, electric transport; examination of the technical condition of elevators; mechanical engineering; water engineering; avia-engineering; heat engineering. Along with the specified types of technical engineering examinations, expert insti-tutions may also conduct other types (subtypes) and complex technical studies with the involvement of relevant specialists in certain fields of knowledge, including avia-tion and water transport.

3. Economic: accounting and tax accounting; financial and economic activity; fi-nancial and credit operations.

4. Merchandising: machinery, equipment, raw materials and consumer goods; transport and commodity science; military property, equipment and weapons.

5. Examination in the field of intellectual property: literary and artistic works; phonograms, videograms, programs (broadcasts) of broadcasting organizations; inventions and utility models; industrial samples; varieties of plants and breeds of animals; commercial (brand) names, trademarks (marks for goods and services), geo-graphical indications; topographies of integrated microcircuits; commercial secrets (know-how) and innovative proposals; economic in the field of intellectual property.

6. Psychological.

7. Art.

8. Ecological.

9. Military.

10. Veterinary.
11. Gemological.
12. Historical and archeological [7].

In order to more fully satisfy the needs of investigative and judicial practice in solving issues that require the application of scientific, technical or other special knowledge, expert institutions organize other types of examinations (except forensic medical and forensic psychiatric), including those that are in the stage of scientific development [7].

There are different points of view regarding the classification of forensic examinations by the fields of special knowledge, used in their conduct (classes, kinds, types and subtypes). Some of the classifications, proposed by domestic and foreign scientists, differ from the unified classifier, given in the mentioned Instruction. Each of the proposed classifications has a certain justification and meets the needs, for which it was developed. However, in the case of engaging an expert and assigning specific expert studies, it is necessary to be guided by the official classifications, set forth in the relevant normative documents that regulate the work procedure of the expert institution or the expert entrusted with conducting the examination.

The classification by types of forensic examinations and their corresponding expert specialties is normatively fixed in:

- the list of types of forensic examinations and expert specialties, according to which the qualification of a forensic expert is assigned to specialists of research institutions of forensic examinations of the Ministry of Justice of Ukraine (hereinafter – the List of MJ of Ukraine);
- the list of types of forensic examinations and expert specialties, according to which the qualification of a forensic expert is assigned to specialists who do not work in state specialized institutions, approved by the order of the Ministry of Justice of Ukraine dated 03.03.2015 No. 301/5 [8];
- the list of types of forensic examination and expert specialties, according to which the qualification of a forensic expert in the Expert Service of the Ministry of Internal Affairs is assigned, approved by the order of the Ministry of Internal Affairs of Ukraine dated 09/21/2020 No. 675 [9] (hereinafter – the List of MIA);
- the list of the main types of forensic examinations and expert specialties, according to which the qualification of a forensic expert is assigned to specialists of expert subdivisions of the SSU, which was approved by the order of the SSU dated 24.12.2014 No. 855 [10] (hereinafter – the List of SSU).

Employees of research institutions of forensic examination of the Ministry of Justice of Ukraine conduct expert research within 41 types (subtypes) of forensic examination in 93 expert specialties, assigned after training and certification [8].

According to the List of MIA, expert studies are conducted within 39 types (subtypes) of forensic examinations in 101 expert specialties, assigned after training and certification [9].

In the List of the Security Service of Ukraine, 51 types (subtypes) of forensic examinations are defined according to a criterion that can be identified as a field of special knowledge, expert studies are carried out in 112 expert specialties, assigned after training and certification [10].

We will compare the types (subtypes) of forensic examinations, indexes and types of expert specialties, according to which the qualifications of a forensic expert are assigned to specialists of state specialized institutions.

The forensic expert qualification is assigned to specialists of state specialized institutions of 39 expert specialties within the scope of forensic examination, according to the List of the Ministry of Justice of Ukraine, the List of the Ministry of Internal Affairs – 50 and the List of the Security Service – 56 (**Table 1.2**). Some expert specialties that are available in the Lists of some departments are not available in others. Thus, according to the type of forensic examination of "Special technical means of secretly obtaining information", expert specialties are assigned only to specialists of expert divisions of the Security Service of Ukraine. Accordingly, the examination of STM of surreptitious audio and video control and surveillance of a person, thing or place; examination of STM of secret removal of information from electronic communication networks, obtaining information about the location of a person or his/her possession, as well as radio equipment (radio-electronic means); examination of STM of secret penetration into an object by unlocking mechanical locking devices, as well as examination of objects; examination of STM of secret removal of information from electronic information systems, penetration into an object by unlocking electronic security devices, as well as examination of software means of surreptitious information acquisition are carried out only by specialists of expert units of the Security Service of Ukraine.

Expert examinations by specialties: 1.3 "Authorship examination of written speech"; 1.4 "Semantic-textual examination of written and oral speech"; 5.3 "Assessment of the possible consequences of the use of explosive devices"; 5.5 "Assessment of the consequences of the influence of technical factors of sabotage (terrorist act), other emergency situations"; 7.4 "Examination of voice and oral speech by technical methods"; 7.5 "Examination of voice and oral speech using linguistic methods" are carried out only by specialists of expert units of the Security Service of Ukraine.

Only the Expert Service of the Ministry of Internal Affairs conducts expert examination in the following specialties: 2.4 "Examination on the documents production age"; 9.7 "Odorological examination".

Table 1.2 Comparison of types (subtypes) of forensic examinations, indexes and types of expert specialties, according to which the qualification of a forensic expert is assigned to specialists of state specialized institutions, within the framework of forensic examination*

| Types (subtypes) of forensic examinations | RIFE of MJ of Ukraine | | Expert service of MIA of Ukraine | | Expert service of SSU | |
|---|-----------------------|--|----------------------------------|--|-----------------------|--|
| | IES** | TES*** | IES** | TES*** | IES** | TES*** |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Handwriting and linguistics | 1.1 | Examination of handwriting and signatures | 1.1 | Examination of handwriting and signatures | 1.1 | Examination of handwriting and signatures |
| | 1.2 | Linguistic examination of speech | 1.2 | Linguistic examination of written speech | | |
| Technical examination of documents | 2.1 | Examination of document details | 2.1 | Examination of document details | 2.1 | Examination of document details |
| | 2.2 | Examination of document materials | 2.2 | Examination of document materials | 2.2 | Examination of document materials |
| | 2.3 | Examination of printing forms and other means of documents production | 2.3 | Examination of printing forms and other means of documents production | 2.3 | Examination of printing forms and other means of documents production |
| | | | 2.4 | Examination of documents production age | | |
| Weapon | 3.1 | Ballistic examination of firearms and ammunition for them | 3.1 | Ballistic examination of firearms and ammunition for them | 3.1 | Ballistic examination of firearms and ammunition for them |
| | 3.2 | Ballistic examination of firearm marks, shot marks and situational circumstances of the shot | 3.2 | Ballistic examination of firearm marks, shot marks and situational circumstances of the shot | 3.2 | Ballistic examination of firearm marks, shot marks and situational circumstances of the shot |

Continuation of Table 1.2

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-----------------------|-----|---|-----|---|-----|---|
| Traceological | 3.3 | Cold weapon examination excluded on the basis of the Order of MJ of Ukraine No. 2117/5 dated June 10, 2021 | 3.3 | Cold weapon examination | 3.3 | Cold weapon examination |
| | 3.5 | Examination of grenade launchers | 3.5 | Examination of grenade launchers | 3.5 | Examination of grenade launchers |
| | 3.6 | Examination of artillery and missile weapons | 3.6 | Examination of artillery and missile weapons | 3.6 | Examination of artillery and missile weapons |
| | 4.1 | Examination of human traces and animal traces | 4.1 | Examination of human traces and animal traces | 4.1 | Examination of human traces and animal traces |
| | 4.2 | Examination of tools, aggregates, instruments and traces left by them, identification of the whole by parts | 4.2 | Examination of tools, aggregates, instruments and traces left by them, identification of the whole by parts | 4.2 | Examination of tools, aggregates, instruments and traces left by them, identification of the whole by parts |
| | 4.3 | Forensic examination of vehicles | 4.3 | Forensic examination of vehicles | 4.3 | Forensic examination of vehicles |
| Explosion engineering | 4.4 | Examination of identification numbers and embossed signs | 4.4 | Examination of identification numbers and embossed signs | 4.4 | Examination of identification numbers and embossed signs |
| | 4.6 | Dactyloscopic examination | 4.6 | Dactyloscopic examination | 4.6 | Dactyloscopic examination |
| | | excluded on the basis of the Order of MJ of Ukraine No. 3819/5 dated September 12, 2022 | 5.1 | Examination of explosives, explosion products and shots | 5.1 | Examination of explosives, explosion products and shots |
| | 5.2 | Examination of explosive devices, traces and circumstances of the explosion | 5.2 | Examination of explosive devices, traces and circumstances of the explosion | 5.2 | Examination of explosive devices, traces and circumstances of the explosion |
| | | | 5.3 | Assessment of the possible consequences of the use of explosive devices | 5.3 | Assessment of the possible consequences of the use of explosive devices |
| | | | | | | |

Continuation of Table 1.2

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|-----|---|-----|---|-----|--|
| | 5.4 | Examination of the circumstances and mechanism of man-made explosions | 5.4 | Examination of the circumstances and mechanism of man-made explosions | 5.4 | Examination of the circumstances and mechanism of man-made explosions |
| | | | | | 5.5 | Assessment of the effects of technical factors of sabotage (terrorist act), other emergency situations |
| Photo technical, portrait (and holographic images) | 6.1 | Examination of photographic images and technical means of their production | 6.1 | Examination of photographic images and technical means of their production | 6.1 | Examination of photographic images and technical means of their production |
| | 6.2 | Identification of a person by appearance based on material images | 6.2 | Identification of a person by appearance based on material images | 6.2 | Identification of a person by appearance based on material images |
| | | excluded on the basis of the Order of MJ of Ukraine No. 2117/5 dated June 10, 2021 | 6.3 | Examination of holographic security images and their elements | 6.3 | Examination of holographic security images and their elements |
| Video and sound recording | 7.1 | Technical examination of materials and means of video and sound recording | 7.1 | Technical examination of materials and means of video and sound recording | 7.1 | Technical examination of materials and means of video and sound recording |
| | 7.2 | Examination of the announcer according to the physical parameters of oral speech, acoustic signals and environments | 7.2 | Examination of the announcer according to the physical parameters of oral speech, acoustic signals and environments | | |
| | 7.3 | Linguistic examination of oral speech | 7.3 | Linguistic examination of oral speech | 7.4 | Examination of voice and oral speech by technical methods |
| | | | | | 7.5 | Examination of voice and oral speech by linguistic methods |

Continuation of Table 1.2

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|-----|--|-----|--|-----|--|
| Special technical means (herein after – STM) of secretly obtaining information | | | | | 7.6 | Examination of STM of surreptitious audio and video control and surveillance of a person, thing or place |
| | | | | | 7.7 | Examination of STM of covertly removal of information from electronic communication networks, obtaining information about the location of a person or his/her possession, as well as radio equipment (radio-electronic means) |
| | | | | | 7.8 | Examination of STM of secret penetration into an object by unlocking mechanical locking devices, as well as examination of objects |
| | | | | | 7.9 | Examination of STM of surreptitious removal of information from electronic information systems, penetration into an object by unlocking electronic security devices, as well as examination of software means of surreptitious information acquisition |
| Materials, substances and products | 8.1 | Examination of paint materials and coatings | 8.1 | Examination of paint materials and coatings | 8.1 | Examination of paint materials and coatings |
| | 8.2 | Examination of polymer materials, plastics and products made from them | 8.2 | Examination of polymer materials, plastics and products made from them | 8.2 | Examination of polymer materials, plastics and products made from them |

Continuation of Table 1.2

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|--------|--|--------|--|--------|--|--------|--|
| 8.3 | Examination of fibrous materials and products from them | 8.3 | Examination of fibrous materials and products from them | 8.3 | Examination of fibrous materials and products from them | 8.3 | Examination of fibrous materials and products from them |
| 8.4 | Examination of oil products and fuel and lubricants | 8.4 | Examination of oil products and fuel and lubricants | 8.4 | Examination of oil products and fuel and lubricants | 8.4 | Examination of oil products and fuel and lubricants |
| 8.5 | Examination of glass, ceramics and products made from them | 8.5 | Examination of glass, ceramics and products made from them | 8.5 | Examination of glass, ceramics and products made from them | 8.5 | Examination of glass, ceramics and products made from them |
| 8.6 | Examination of narcotic drugs, psychotropic substances, their analogues and precursors | 8.6 | Examination of narcotic drugs, psychotropic substances, their analogues and precursors | 8.6 | Examination of narcotic drugs, psychotropic substances, their analogues and precursors | 8.6 | Examination of narcotic drugs, psychotropic substances, their analogues and precursors |
| 8.7 | Examination of alcohol-containing mixtures | 8.7 | Examination of alcohol-containing mixtures | 8.7 | Examination of alcohol-containing mixtures | 8.7 | Examination of alcohol-containing mixtures |
| 8.8 | Examination of soils | 8.8 | Examination of soils | 8.8 | Examination of soils | 8.8 | Examination of soils |
| 8.9 | Examination of metals and alloys and products made from them | 8.9 | Examination of metals and alloys and products made from them | 8.9 | Examination of metals and alloys and products made from them | 8.9 | Examination of metals and alloys and products made from them |
| 8.10.1 | Examination on the presence of pesticides in the environment | 8.10.1 | Examination on the presence of pesticides in the environment | 8.10.1 | Examination on the presence of pesticides in the environment | 8.10.1 | Examination on the presence of pesticides in the environment |
| 8.10.2 | Examination on the presence of harmful substances in the environment | 8.10.2 | Examination on the presence of harmful substances in the environment | 8.10.2 | Examination on the presence of harmful substances in the environment | 8.10.2 | Examination on the presence of harmful substances in the environment |
| 8.11 | Examination of substances of chemical production and special chemicals | 8.11 | Examination of substances of chemical production and special chemicals | 8.11 | Examination of substances of chemical production and special chemicals | 8.11 | Examination of substances of chemical production and special chemicals |
| 8.12 | Examination of food products | 8.12 | Examination of food products | 8.12 | Examination of food products | 8.12 | Examination of food products |

Continuation of Table 1.2

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|------------|------|--|------|---|------|---|
| | 8.13 | Examination of potent and poisonous substances | 8.13 | Examination of potent and poisonous substances | 8.13 | Examination of potent and poisonous substances |
| | | | 8.14 | Examination of special chemicals | 8.14 | Examination of special chemicals |
| | | | 8.15 | Examination of potent and poisonous drugs | 8.15 | Examination of potent and poisonous drugs |
| | | | 8.16 | Examination of conductors with signs of short circuit | 8.16 | Examination of conductors with signs of short circuit |
| | | | 8.17 | Examination of the cause of destruction of products made of metals and alloys | 8.17 | Examination of the cause of destruction of products made of metals and alloys |
| | 8.18 | Examination of explosive substances, explosion products (shot) | | | | |
| Biological | 9.1 | Examination of objects of plant origin | 9.1 | Examination of objects of plant origin | 9.1 | Examination of objects of plant origin |
| | 9.2 | Examination of objects of animal origin | 9.2 | Examination of objects of animal origin | 9.2 | Examination of objects of animal origin |
| | | | 9.3 | Immunological examination | 9.3 | Immunological examination |
| | | | 9.4 | Cytological examination | 9.4 | Cytological examination |
| | 9.5 | Molecular-genetic examination | 9.5 | Molecular-genetic examination | 9.5 | Molecular-genetic examination |
| | | | 9.6 | Hair examination | 9.6 | Hair examination |
| | | | 9.7 | Odorological examination | | |

IES – indexes of expert specialties, *TES – types of expert specialties

*Summarized and systematized by the author using [8–10]

It should be noted, that under the index of expert specialty 1.2 in the Expert Service of the Ministry of Internal Affairs, the expert specialty "linguistic examination of written speech" is assigned to specialists of research institutions of forensic examinations of the Ministry of Justice of Ukraine, taking into account the order of the Ministry of Justice of Ukraine dated 10.06.2021 No. 2117/5 [11] – "linguistic examination of speech".

Attention should be paid to the exclusion from the List of the Ministry of Justice of Ukraine of specialties:

- 3.4 "Examination of weapons with a non-kinetic principle of damage" – due to the lack of methods;
- 6.3 "Examination of holographic security images and their elements" – taking into account the lack of orders for this area of research and specialists in the system;
- 8.10 "Examination of the presence of harmful substances in the environment" [11];
- 5.1 "Examination of explosive substances, explosion products and shots" was transferred from explosive technical examination to the examination of materials, substances and products under the expert specialty index 8.18 "Examination of explosive substances, explosion products (shot)" [12].

The aforesaid expert specialties are available in the List of the Ministry of Internal Affairs and the List of the Security Service of Ukraine. In addition, in the specified lists, the type of forensic examination "Photographic, portrait and holographic images" is indicated, according to which, in addition to 6.1 "Examination of photographic images and technical means of their production" and 6.2 "Identification of a person by appearance based on material images", the qualification of a forensic expert is assigned to expert specialty 6.3 "Examination of holographic security images and their elements".

The forensic expert qualification is assigned to specialists of state specialized institutions of 27 expert specialties within the scope of technical engineering examination, according to the List of the Ministry of Justice of Ukraine, the List of the Ministry of Internal Affairs – 26 and the List of the Security Service – 29 (**Table 1.3**). In the technical engineering examination, the expert specialty "Examination of telecommunication systems (equipment) and means" is assigned under the index of expert specialty 10.17 to specialists of research institutions of forensic examinations of the Ministry of Justice of Ukraine and of the Expert Service of the Ministry of Internal Affairs under the type of forensic examination "Telecommunications". At the same time, specialists of the SSU's expert units under the same index are assigned the expert specialty "Examination of electronic communications" (**Table 1.3**) under the type of forensic examination "Electronic Communications".

Table 1.3 Comparison of types (subtypes) of forensic examinations, indexes and types of expert specialties, according to which the qualification of a forensic expert is assigned to specialists of state specialized institutions, within the scope of technical engineering examination*

| Types (subtypes) of forensic examinations | RIFE of MJ of Ukraine | | | Expert service of MIA of Ukraine | | | Expert service of SSU | | |
|---|-----------------------|---|-------|---|-------|---|-----------------------|--------|--------|
| | IES** | TES*** | IES** | TES*** | IES** | TES*** | IES** | TES*** | TES*** |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | |
| Transport engineering | 10.1 | Examination of the circumstances and mechanism of traffic accidents | 10.1 | Examination of the circumstances and mechanism of traffic accidents | 10.1 | Examination of the circumstances and mechanism of traffic accidents | | | |
| | 10.2 | Examination of the technical condition of vehicles | 10.2 | Examination of the technical condition of vehicles | 10.2 | Examination of the technical condition of vehicles | | | |
| | 10.3 | Examination of vehicle parts | 10.3 | Examination of vehicle parts | 10.3 | Examination of vehicle parts | | | |
| Life safety | 10.4 | Transport and traceological examination | 10.4 | Transport and traceological examination | 10.4 | Transport and traceological examination | | | |
| | 10.5 | Examination of the causes and consequences of violation of the requirements of life safety and occupational health and safety | 10.5 | Examination of the causes and consequences of violation of the requirements of life safety and occupational health and safety | 10.5 | Examination of the causes and consequences of violation of the requirements of life safety and occupational health and safety | | | |
| | 10.6 | Examination of real estate objects, building materials, constructions and relevant documents | 10.6 | Examination of real estate objects, building materials, constructions and relevant documents | 10.6 | Examination of real estate objects, building materials, constructions and relevant documents | | | |
| Land engineering | 10.7 | Distribution of land and determination of the order of use of land plots | 10.7 | Distribution of land and determination of the order of use of land plots | 10.7 | Distribution of land and determination of the order of use of land plots | | | |

Continuation of Table 1.3

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-------------------------|---------|---|---------|---|---------|---|
| Fire engineering | 10.8 | Examination of the circumstances of the occurrence and spread of fires and compliance with fire safety requirements | 10.8 | Examination of the circumstances of the occurrence and spread of fires and compliance with fire safety requirements | 10.8 | Examination of the circumstances of the occurrence and spread of fires and compliance with fire safety requirements |
| Computer | 10.9 | Examination of computer technology and software products | 10.9 | Examination of computer technology and software products | 10.9 | Examination of computer technology and software products |
| Construction assessment | 10.10 | Determination of the estimated value of construction objects and structures | 10.10 | Determination of the estimated value of construction objects and structures | 10.10 | Determination of the estimated value of construction objects and structures |
| Railway | 10.11 | Examination of the circumstances and mechanism of the railway accident | 10.11 | Examination of the circumstances and mechanism of the railway accident | 10.11 | Examination of the circumstances and mechanism of the railway accident |
| | 10.12 | Examination of the technical condition of the rolling stock of railway transport | 10.12 | Examination of the technical condition of the rolling stock of railway transport | 10.12 | Examination of the technical condition of the rolling stock of railway transport |
| | 10.13.1 | Examination of the engineering equipment of the upper structure of the track | 10.13.1 | Examination of the engineering equipment of the upper structure of the track | 10.13.1 | Examination of the engineering equipment of the upper structure of the track |
| | 10.13.2 | Examination of the engineering equipment of the lower structure of the track | 10.13.2 | Examination of the engineering equipment of the lower structure of the track | 10.13.2 | Examination of the engineering equipment of the lower structure of the track |
| Land assessment | 10.14 | Assessment of plots | 10.14 | Assessment of plots | 10.14 | Assessment of plots |
| Mining engineering | 10.15 | Examination of the causes and consequences of emergencies in the mining industry and in underground conditions | 10.15 | Examination of the causes and consequences of emergencies in the mining industry and in underground conditions | 10.15 | Examination of the causes and consequences of emergencies in the mining industry and in underground conditions |

Continuation of Table 1.3

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|----------------------------------|-------|--|-------|--|---------|--|
| Road engineering | 10.16 | Road examination | 10.16 | Road examination | 10.16 | Road examination |
| Telecommunication | 10.17 | Examination of telecommunication systems (equipment) and means | 10.17 | Examination of telecommunication systems (equipment) and means | | |
| Electronic communications | | | | | 10.17 | Examination of electronic communications |
| | | | | | 10.17.1 | Determination of the geolocation of an electronic device |
| Electric engineering | 10.18 | Examination of technical operation of electrical equipment | 10.18 | Examination of technical operation of electrical equipment | 10.18 | Examination of technical operation of electrical equipment |
| Environmental engineering | 10.19 | Examination of the circumstances and organizational and technical causes and consequences of the impact of man-made sources on environmental objects | 10.19 | Examination of the circumstances and organizational and technical causes and consequences of the impact of man-made sources on environmental objects | 10.19 | Examination of the circumstances and organizational and technical causes and consequences of the impact of man-made sources on environmental objects |
| Land management | 10.20 | Examination on land management issues | 10.20 | Examination on land management issues | 10.20 | Examination on land management issues |
| Electric transport | 10.21 | Examination of urban electric transport | 10.21 | Examination of urban electric transport | 10.21 | Examination of urban electric transport |
| Technical condition of elevators | 10.22 | Examination of the technical condition of elevators and the conditions of their safe operation | 10.22 | Examination of the technical condition of elevators and the conditions of their safe operation | 10.22 | Examination of the technical condition of elevators and the conditions of their safe operation |
| Mechanical engineering | 10.23 | Examination of the technical condition and operating conditions of machines and mechanisms | 10.23 | Examination of the technical condition and operating conditions of machines and mechanisms | 10.23 | Examination of the technical condition and operating conditions of machines and mechanisms |

Continuation of Table 1.3

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|-------|---|-------|--|-------|--|
| Water engineering | 10.24 | Examination of accidents on water transport | | | | |
| Avia-engineering | 10.25 | Examination of aviation accidents and incidents | | | | |
| Radio equipment (radio-electronic means) | | | | | 10.26 | Examination of radio equipment (radio-electronic means) of information reception, processing and transmission |
| Water transport | | | 10.27 | Examination of the technical condition of shipping facilities and individual components, crew actions, radar maintenance | 10.27 | Examination of the technical condition of shipping facilities and individual components, crew actions, radar maintenance |
| Air transport | | | 10.28 | Examination of the technical condition of aircraft and individual components, actions of aviation personnel, aeronautical flight support | 10.28 | Examination of the technical condition of aircraft and individual components, actions of aviation personnel, aeronautical flight support |
| Technological engineering of critical infrastructure facilities | | | | | 10.29 | Examination of critical infrastructure facilities |
| Heat engineering | 10.30 | Heat engineering examination | | | | |

***IES – indexes of expert specialties, ***TES – types of expert specialties*

**Summarized and systematized by the author using [8–10]*

It should be noted, that certain types of forensic examinations are indicated only in the SSU List, namely:

- "Electronic communications", according to which expert specialties 10.17 "Electronic communications examination" and 10.17.1 "Determination of the geolocation of an electronic device" are assigned;
- "Radio equipment (radio-electronic means)", according to which the expert specialty "Examination of radio equipment (radio-electronic means) of reception, processing and transmission of information" is assigned under the index 10.26;
- "Technological Engineering of critical infrastructure objects", according to which the expert specialty "Examination of critical infrastructure objects" is assigned under the index 10.29.

At the same time, some types of examination are mentioned only in the List of the Ministry of Justice of Ukraine, namely:

- "Water engineering", according to which the expert specialty "Examination of accidents on water transport" is assigned under the index 10.24;
- "Avia-engineering", according to which the expert specialty 10.25 "Examination of aviation accidents and incidents" is assigned;
- "Heat engineering" for which the expert specialty 10.30 "Heat engineering examination" is assigned.

So, as regards the "Economic", "Transport and Commodity" examinations, "Military Property" the indexes and types of expert specialties, specified in the investigated Lists for these types of examinations, coincide (**Table 1.4**).

It should be noted, that the expert specialty 12.1.1 "Examination of gaming equipment" is indicated only in the List of the SSU.

The forensic expert qualification is assigned to specialists of state specialized institutions of 9 expert specialties within the scope of examination in the field of intellectual property, according to the List of the Ministry of Justice of Ukraine, the List of the Ministry of Internal Affairs – 11 and the List of the Security Service – 11 (**Table 1.5**). It should be noted, that only in the List of the Ministry of Justice of Ukraine there is no such type of forensic examinations "Topographies of integrated microcircuits".

According to the List of the Security Service of Ukraine and the List of the Ministry of Internal Affairs, the expert specialty 13.7 "Examination related to the topographies of integrated microcircuits" (**Table 1.5**) is assigned to the specified type.

In the List of the Ministry of Justice of Ukraine, unlike the List of the Ministry of Internal Affairs and the List of the Security Service of Ukraine, there is also no expert specialty 13.5.2 "Examination related to animal breeds". As to the "Psychological", "Military", "Historical-archaeological" examination, the indexes and types of expert specialties, indicated in the investigated Lists, coincide (**Table 1.6**).

Table 1.4 Comparison of types (subtypes) of forensic examinations, indexes and types of expert specialties, according to which the qualification of a forensic expert is assigned to specialists of state specialized institutions, within the limits of economic and commodity examination*

| Types (subtypes) of forensic examinations | RIFE of MJ of Ukraine | | | Expert service of MIA of Ukraine | | | Expert service of SSU | | |
|---|-----------------------|---|-------|---|--------|---|-----------------------|---|---------|
| | IES** | TES*** | IES** | TES*** | IES** | TES*** | IES** | TES*** | TES**** |
| Economic | 11.1 | Examination of accounting, tax accounting and reporting documents | 11.1 | Examination of accounting, tax accounting and reporting documents | 11.1 | Examination of accounting, tax accounting and reporting documents | 11.1 | Examination of accounting, tax accounting and reporting documents | TES**** |
| | 11.2 | Examination of documents on the economic activity of enterprises and organizations | 11.2 | Examination of documents on the economic activity of enterprises and organizations | 11.2 | Examination of documents on the economic activity of enterprises and organizations | 11.2 | Examination of documents on the economic activity of enterprises and organizations | |
| | 11.3 | Examination of documents of financial and credit operations | 11.3 | Examination of documents of financial and credit operations | 11.3 | Examination of documents of financial and credit operations | 11.3 | Examination of documents of financial and credit operations | |
| Commodity | 12.1 | Determination of the cost of machines, equipment, raw materials and consumer goods | 12.1 | Determination of the cost of machines, equipment, raw materials and consumer goods | 12.1 | Determination of the cost of machines, equipment, raw materials and consumer goods | 12.1 | Determination of the cost of machines, equipment, raw materials and consumer goods | |
| | | | | | 12.1.1 | Examination of gaming equipment | 12.1.1 | Examination of gaming equipment | |
| Transport and commodity | 12.2 | Determination of the cost of wheeled vehicles and the amount of damage caused to the owner of the vehicle | 12.2 | Determination of the cost of wheeled vehicles and the amount of damage caused to the owner of the vehicle | 12.2 | Determination of the cost of wheeled vehicles and the amount of damage caused to the owner of the vehicle | 12.2 | Determination of the cost of wheeled vehicles and the amount of damage caused to the owner of the vehicle | |
| | 12.3 | Assessment of shipping facilities | 12.3 | Assessment of shipping facilities | 12.3 | Assessment of shipping facilities | 12.3 | Assessment of shipping facilities | |
| | 12.4 | Assessment of aircraft | 12.4 | Assessment of aircraft | 12.4 | Assessment of aircraft | 12.4 | Assessment of aircraft | |
| Military property | 12.5 | Assessment of weapons and property and equipment for military purposes | 12.5 | Assessment of weapons and property and equipment for military purposes | 12.5 | Assessment of weapons and property and equipment for military purposes | 12.5 | Assessment of weapons and property and equipment for military purposes | |

IES – indexes of expert specialties; *TES – types of expert specialties

*Summarized and systematized by the author using [8–10]

Table 1.5 Comparison of types (subtypes) of forensic examinations, indexes and types of expert specialties, according to which the qualification of a forensic expert is assigned to specialists of state specialized institutions, within the scope of examination in the field of intellectual property*

| Types (subtypes) of forensic examinations | RIFE of MJ of Ukraine | | | Expert service of MIA of Ukraine | | | Expert service of SSU | | |
|---|---|---|---|---|---|---|-----------------------|--------|--|
| | IES** | TES*** | IES** | TES*** | IES** | TES*** | IES** | TES*** | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | |
| Literary and artistic works | 13.1.1 Examination related to literary, artistic works, and others | 13.1.1 Examination related to literary, artistic works, and others | 13.1.1 Examination related to literary, artistic works, and others | 13.1.1 Examination related to literary, artistic works, and others | 13.1.1 Examination related to literary, artistic works, and others | 13.1.1 Examination related to literary, artistic works, and others | | | |
| | 13.1.2 Examination related to computer programs and data compilations (databases) | 13.1.2 Examination related to computer programs and data compilations (databases) | 13.1.2 Examination related to computer programs and data compilations (databases) | 13.1.2 Examination related to computer programs and data compilations (databases) | 13.1.2 Examination related to computer programs and data compilations (databases) | 13.1.2 Examination related to computer programs and data compilations (databases) | | | |
| Phonograms, programs (broadcasts) of broadcasting organizations | 13.2 Examination related to performances, phonograms, videograms, programs (broadcasts) of broadcasting organizations | 13.2 Examination related to performances, phonograms, videograms, programs (broadcasts) of broadcasting organizations | 13.2 Examination related to performances, phonograms, videograms, programs (broadcasts) of broadcasting organizations | 13.2 Examination related to performances, phonograms, videograms, programs (broadcasts) of broadcasting organizations | 13.2 Examination related to performances, phonograms, videograms, programs (broadcasts) of broadcasting organizations | 13.2 Examination related to performances, phonograms, videograms, programs (broadcasts) of broadcasting organizations | | | |
| Inventions and utility models | 13.3 Examination related to inventions and utility models | 13.3 Examination related to inventions and utility models | 13.3 Examination related to inventions and utility models | 13.3 Examination related to inventions and utility models | 13.3 Examination related to inventions and utility models | 13.3 Examination related to inventions and utility models | | | |
| Industrial samples | 13.4 Examination related to industrial samples | 13.4 Examination related to industrial samples | 13.4 Examination related to industrial samples | 13.4 Examination related to industrial samples | 13.4 Examination related to industrial samples | 13.4 Examination related to industrial samples | | | |

Continuation of Table 1.5

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|---|---|---|---|---|---|
| Plant varieties | 13.5.1 Examination related to plant varieties | 13.5.1 Examination related to plant varieties | 13.5.1 Examination related to plant varieties | 13.5.1 Examination related to plant varieties | 13.5.1 Examination related to plant varieties | 13.5.1 Examination related to plant varieties |
| Commercial (brand) names, trade-marks (marks for goods and services), geographical indications | 13.6 Examination related to commercial (brand) names, trademarks (marks for goods and services), geographical indications | 13.6 Examination related to commercial (brand) names, trademarks (marks for goods and services), geographical indications | 13.6 Examination related to commercial (brand) names, trademarks (marks for goods and services), geographical indications | 13.6 Examination related to commercial (brand) names, trademarks (marks for goods and services), geographical indications | 13.6 Examination related to commercial (brand) names, trademarks (marks for goods and services), geographical indications | 13.6 Examination related to commercial (brand) names, trademarks (marks for goods and services), geographical indications |
| Topographies of integrated microcircuits | | | 13.7 Examination related to topographies of integrated microcircuits | | 13.7 Examination related to topographies of integrated microcircuits | 13.7 Examination related to topographies of integrated microcircuits |
| Commercial secrets (know-how) and innovative proposals | 13.8 Examination related to commercial secrets (know-how) and innovative proposals | 13.8 Examination related to commercial secrets (know-how) and innovative proposals | 13.8 Examination related to commercial secrets (know-how) and innovative proposals | 13.8 Examination related to commercial secrets (know-how) and innovative proposals | 13.8 Examination related to commercial secrets (know-how) and innovative proposals | 13.8 Examination related to commercial secrets (know-how) and innovative proposals |
| Economic in the field of intellectual property | 13.9 Economic examination in the field of intellectual property | 13.9 Economic examination in the field of intellectual property | 13.9 Economic examination in the field of intellectual property | 13.9 Economic examination in the field of intellectual property | 13.9 Economic examination in the field of intellectual property | 13.9 Economic examination in the field of intellectual property |

****IES – indexes of expert specialties, ***TES – types of expert specialties**

***Summarized and systematized by the author using [8–10]**

Table 1.6 Comparison of types (subtypes) of forensic examinations, indexes and types of expert specialties, according to which the qualification of a forensic expert is assigned to specialists of state specialized institutions, within the limits of psychological, art, military, gemological, veterinary, historical and archaeological examination*

| Types (subtypes) of forensic examinations | RIFE of MJ of Ukraine | | Expert service of MIA of Ukraine | | Expert service of SSU | |
|---|-----------------------|--|----------------------------------|--|-----------------------|--|
| | IES** | TES*** | IES** | TES*** | IES** | TES*** |
| Psychological | 14.1 | Psychological examination | 14.1 | Psychological examination | 14.1 | Psychological examination |
| Art | 15.1 | Art examination | 15.1 | Art examination | 15.1 | Art examination |
| Military | 16.1 | Military examination | 16.1 | Military examination | 16.1 | Military examination |
| Gemological | 17.1.1.1 | Examination of precious stones | 17.1 | Examination of precious, semi-precious and decorative stones | 17.1 | Examination of precious, semi-precious and decorative stones |
| | 17.1.2 | Examination of diamonds | | | | |
| | 17.1.3 | Examination of precious stones of organogenic origin | | | | |
| | 17.1.4 | Examination of semi-precious stones | | | | |
| | 17.1.5 | Examination of decorative stones | | | | |
| Veterinary | 18.1 | Veterinary examination | | | 18.1 | Veterinary examination |
| Historical and archeological | 19.1 | Historical and archeological examination of plots | 19.1 | Historical and archeological examination of plots | 19.1 | Historical and archeological examination of plots |

IES – indexes of expert specialties, *TES – types of expert specialties

*Summarized and systematized by the author using [8–10]

As for the forensic art examination, the expert specialty 15.2 "Examination in the field of protection of public morals" is mentioned in the List of the Security Service of Ukraine and the List of the Ministry of Internal Affairs. Specialists of research institutes of forensic examinations of the Ministry of Justice of Ukraine do not conduct research in this direction (**Table 1.6**).

The forensic expert qualification is assigned to specialists of state specialized institutions of 5 expert specialties within the limits of gemological examination, according to the List of the Ministry of Justice of Ukraine, the List of the Ministry of Internal Affairs – 1 and the List of the Security Service of Ukraine – 1 (**Table 1.6**). Attention should be paid to such a type of forensic examination as "Gemological".

According to the List of the Security Service of Ukraine and the List of the Ministry of Internal Affairs, the expert specialty "Examination of precious, semi-precious and decorative stones" is assigned under the index 17.1. Instead, the List of the Ministry of Justice of Ukraine mentions five types of expert specialties under indexes different from the above, namely: 17.1.1 "Examination of precious stones", 17.1.2 "Examination of diamonds", 17.1.3 "Examination of precious stones of organogenic origin", 17.1.4 "Examination of semi-precious stones", 17.1.5 "Examination of decorative stones" (**Table 1.6**).

In the List of the Ministry of Internal Affairs, there is no such type of forensic examinations as "Veterinary". According to the List of the SSU and the List of the Ministry of Justice of Ukraine, the expert specialty 18.1 "Veterinary examination" is assigned to this type (**Table 1.6**).

Forensic experts who do not work in state specialized expert institutions conduct expert research within 26 types (subtypes) of forensic examination (transport engineering; life safety; construction engineering; land engineering; fire engineering; computer; construction assessment; railway; land assessment; mining engineering; road engineering; telecommunications; electrical engineering; environmental engineering; land management; electric transport; technical condition of elevators; economic; commodity science; transport-commodity science; military property; intellectual property (literary and artistic works; phonograms, videograms, programs (broadcasts) of broadcasting organizations; inventions and utility models; industrial samples; plant varieties; commercial (brand) names, trademarks (marks for goods and services), geographical specifications, commercial secrets (know-how) and innovative proposals; economic in the field of intellectual property; psychological; art; gemological; veterinary) according to 48 expert specialties, assigned to them after training and certification in accordance with the Regulation on expert qualification commissions and certification of court experts, approved by order of the Ministry of Justice of Ukraine [8].

Attention should be paid to the fact that the Law stipulates that only state specialized institutions carry out forensic expert activities related to the conduct of forensic, forensic medical and forensic psychiatric examinations [13].

Therefore, in Ukraine, there is a monopoly on conducting forensic, forensic medical and forensic psychiatric examinations only by experts of state specialized institutions, which leads to criticism, since the dependence of expert institutions on the departments, in the structure of which they are located, and in general, in high-profile cases, even on political will of the parliamentary-government majority, results in the fact that judicial practice often received and receives biased opinions of experts, which usually cover up abuse or negligence, which was repeatedly established by the European Court of HR in applications against Ukraine [14].

O. Kaluzhna comes to the conclusion that due to corporate and political interests, not excluding the corruption component and abuse of office, the state judicial expert monopoly needs to be revised [14]. Other scientists also claim similar observations regarding "custom", biased conclusions, which court decisions are based on [15].

The sphere of activity of private forensic experts should be expanded – they should be given the right to conduct forensic examinations, which they do not currently have the right to conduct. This will create greater competition between the public and private sectors, improve the quality of expert examination, reduce the time, needed to conduct it, relieving the burden on state forensic expert institutions.

Thus, the most complete is the List of the main types of forensic examinations and expert specialties, according to which the qualification of a forensic expert is assigned to specialists of the expert units of the SSU (**Fig. 1.1**).

It should also be mentioned the List of the main types of forensic examinations and expert specialties, according to which the qualifications of a forensic expert are assigned to specialists of the Main Expert Forensic Center of the State Border Service of Ukraine [16], which specifies one type of forensic examinations – technical examination of documents and outlines three types of expert specialties:

- examination of document details (expert specialty index 2.1);
- examination of document materials (expert specialty index 2.1);
- examination of printing forms and other means of producing documents (expert specialty index 2.3).

In addition, the qualifications of a forensic expert are assigned to employees of institutions that conduct forensic medical examinations in the following specialties: forensic medical examination, forensic histology, forensic toxicology, forensic immunology, forensic cytology, forensic criminology [17, 18]. The qualification of a forensic expert and qualification classes are also assigned for forensic psychiatric experts [19].

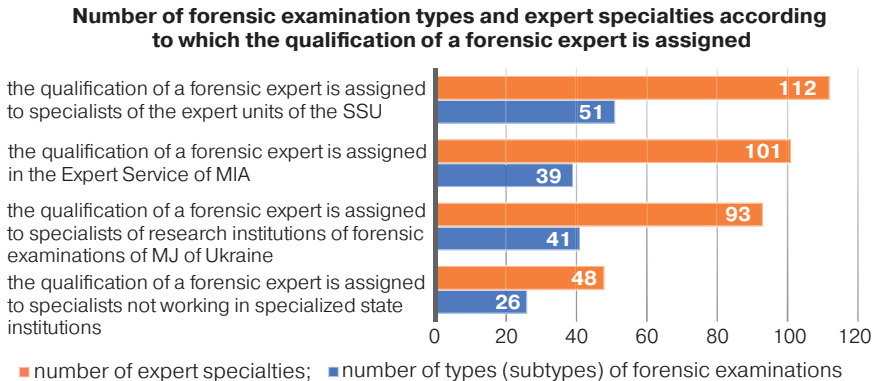


Fig. 1.1 The number of types of forensic examination and expert specialties, according to which the qualification of a forensic expert is assigned [8–10]

The existing classification of forensic examinations by the fields of special knowledge, used in their conduct, is outdated and does not meet modern requirements. This creates difficulties not only for forensic experts and persons who wish to become them, but also for the court, participants in the legal process, and all citizens who are interested in obtaining the opinion of a forensic expert. After all, there is a need to determine the type of expert examination or check the conformity of the type of examination, indicated in the conclusion, with the type that was specified in the decision on the involvement of an expert and the assignment of the examination; compliance of the expert's specialty with the type of forensic examination, conducted by him/her; conformity of the questions, posed to the expert and the conclusions, drawn to the subject of the type of examination that was assigned and conducted, as well as the specialty of the expert; compliance by experts with various specialties of their competence when conducting a comprehensive examination, etc. The classification of forensic examinations is related to cases where an expert goes beyond the limits of his/her specialty.

It is appropriate to pay attention to the fact that currently 17 working groups are working effectively in the European Network of Forensic Science Institutes (hereinafter – ENFSI), consisting of experts of a specific expert specialty: traces of animals, plants and soil; digital image; DNA; documents; drugs; explosive substances; fingerprint; firearms/shot marks; examination of fires and explosions; forensic information technologies; forensic speech examination and audio analysis; handwriting; labels; paint, glass and labels; analysis of traffic accidents; crime scene; textiles and hair [20].

Innovative technologies were of significant importance in the formation and development of forensic expert activity. In order to be adequate to modern risks, challenges and threats in the field of security of citizens, legal entities and the state, forensic expert activity integrates the latest achievements of science and technology. That is why the demarcation of forensic examinations by fields of special knowledge or other criteria cannot be exhaustive in connection with the rapid scientific and technical progress, the constant introduction of innovative technologies in the field of forensic examinations, and the systematic development of new methods and methodologies. This gives reason to predict the emergence of new expert specialties, types and subspecies, kinds, and classes of forensic examinations. The existing classification can be supplemented with new types, kinds and even classes of forensic examinations as new private scientific directions are elaborated and the practice of expert examination develops.

1.7 Conclusions and prospects for further development in this direction

According to the results of the conducted research, it should be noted, that there is a discrepancy between the types of forensic examination and expert specialties according to which the qualification of a forensic expert is assigned in the departmental lists. This leads to misunderstanding of the correspondence of expert specialties and their demarcation by customers of expert examinations.

Without the unification of the interdepartmental approach to the classification of forensic examinations, it is difficult to avoid errors that can cause the issuance of illegal and unfounded court decisions. The problem of unification can be solved by working out a general approach to the classification of kinds and types of forensic examinations with consolidation in an interdepartmental normative act, which should be based on the criteria of the general theory of forensic examination. The creation of a modern unified list of types of forensic examinations and their corresponding expert specialties, according to which the qualification of a forensic expert is assigned, can be considered as a strategic task, which, if successfully implemented, can open the way to solving many issues facing the expert community.

Expanding the sphere of activity of private forensic experts by giving them the right to conduct those forensic examinations, which they do not have the right to conduct today, will allow to create greater competition between the public and private sectors, improve the quality of expert examination, shorten the terms of their conduct, relieving the burden on state forensic expert institutions.

Taking into account the fact that it is currently planned to provide opinions by experts in electronic form, the creation of a forensic expert's office and its integration

with the Unified Judicial Information and Telecommunication System (UJITS), the creation of a modern unified list of types of forensic examinations and their corresponding expert specialties, according to which the qualification of a forensic expert is assigned, is on the agenda.

The role of forensic examination continues to grow in the system of legal regulation and law enforcement in society. With the emergence of new social relations, production technologies and spheres of consumption, the informational field of proof for all categories of cases is constantly expanding and becoming more complicated. The level of development of science, engineering and technology in general, the constant exponential growth and complication of scientific information, the processes of integration and differentiation of scientific knowledge are of key importance for forensic expert activity. The appearance of new objects that did not exist before, or were transformed from already existing ones, as a result of the application of innovative technologies, contributes to the discovery of new properties and the manifestation of new signs of these properties, which, in turn, leads to the emergence of new expert specialties, types and subtypes, kinds, classes of forensic examinations.

Conflict of interest statement

The authors declare that there is no conflict of interest in relation to this paper, as well as the published research results, including the financial aspects of conducting the research, obtaining and using its results, as well as any non-financial personal relationships.

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