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The Conception of Implementation of Vision for European Forensic Science 2020 in Lithuania

Eglė Bilevičiūtė, Vidmantas Egidijus Kurapka, Snieguolė Matulienė, Sigutė Stankevičiūtė

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***Abstract*—**The Council of European Union (EU Council) has stressed on several occasions the need for a concerted, comprehensive and effective solution to delinquency problems in EU communities. In the context of establishing a European Forensic Science Area and the development of forensic science infrastructure in Europe, EU Council believes that forensic science can significantly contribute to the efficiency of law enforcement, crime prevention and combating crimes. Lithuanian scientists have consolidated to implement a project named "Conception of the vision for European Forensic Science 2020 implementation in Lithuania" (the project is funded for the period of 1 March 2014 - 31 December 2016) with the objective to create a conception of implementation of the vision for European Forensic Science 2020 in Lithuania by 1) evaluating the current status of Lithuania's forensic system and opportunities for its improvement; 2) analysing achievements and knowledge in investigation of crimes listed in conclusions of EU Council on the vision for European Forensic Science 2020 including creation of a European Forensic Science Area and the development of forensic science infrastructure in Europe: trafficking in human beings, organised crime and terrorism; 3) analysing conceptions of criminalistics, which differ in different EU member states due to the variety of forensic schools, and finding means for their harmonization. Apart from the conception of implementation of the vision for European Forensic Science 2020 in Lithuania, the Project is expected to suggest provisions that will be relevant to other EU countries as well. Consequently, the presented conception of implementation of vision for European Forensic Science 2020 in Lithuania could initiate a project for a common vision of European Forensic Science and contribute to the development of the EU as an area of freedom, security and justice. The article presents main ideas of the project of the conception of the vision for European Forensic Science 2020 of EU Council and analyses its legal background, as well as prospects of and challenges for its implementation in Lithuania and the EU.

***Keywords*—**EUROVIFOR, standardization, Vision for European Forensic Science 2020.

I. Introduction

THE and benefits of improving and regulating Forensic Science with the aim to improve the system of criminal justice was firstly recognized in the USA. The USA Congress ordered the National Academy of Sciences to conduct a study that resulted in a report "Strengthening Forensic Science in the United States: A Path Forward" published in 2009 [1]. What was needed in order to advance the forensic science disciplines, including upgrading of systems and organizational structures, better training, widespread adoption of uniform and enforceable best practices, and mandatory certification and accreditation programs were revealed and proposals for improvement were expressed by a joint research team. The conducted research was just a beginning of much deeper interest in Forensic Science. Hence, a few years later[1], another scientific study was performed by J. E. Laurin. The purpose of the research was to broaden understanding of how Forensic Science develops and applies in criminal cases. J. E. Laurin points to a raft of yet unaddressed issues concerning the meaning of scientific integrity and reliability in the context of investigative decisions that are by and large committed to the discretion of decidedly unscientific actors in her study [2]. As a result, the conducted solid researches in the USA show that Forensic Science is in need of permanent research and plays even a more important role in combating crime than was thought before.

Research in Forensic Science was also conducted in the Netherlands. The Netherlands Forensic Institute, as one of the leading Forensic Science institutions, was asked by the US National Institute of Standards and Technology to write a paper on its experiences and observations. The paper was called "Trends, Challenges and Strategy in the Forensic Science Sector" and focused on governance of modern forensic science institutions in the Netherlands. It reviewed some of practical problems that the Forensic Science sector had to resolve: understanding what customers of Forensic Science institutions are or might be and what services they need, increasing the value of the information Forensic Science institutions provide to the client, and finally, accelerating operations of Forensic Science institutions [3]. The conclusions of researches conducted in the Netherlands are very similar to those in the USA: "Good forensic science and medical examiner practices are of clear value from a homeland security perspective because of their roles in bringing criminals to justice and in dealing with the effects of natural and human-made mass disasters [3]."

Finally, it is necessary to mention a joint research project of scientific institutions from the Netherlands, Germany, Poland, Spain, Cyprus, the United Kingdom, Ireland, Czech Republic, Finland, Belgium and Sweden with their associated partners from Canada and Switzerland, called "Improving Forensic Methodologies across Europe (IFMAE)"[2]. The IFMAE Project focuses on identifying the best methodologies for specific

Eglė Bilevičiūtė, PhD, is with the Mykolas Romeris University, Law Faculty, Lithuania (phone: +37068649690; e-mail: eglek@mruni.eu).

Vidmantas Egidijus Kurapka, PhD; Snieguolė Matulienė, PhD; and Sigutė Stankevičiūtė, MSc, are with the Mykolas Romeris University, Law Faculty, Lithuania (e-mail: egidijus@mruni.eu, m.sniega@mruni.eu, sigutess@gmail.com).

[1] In 2012.

[2] Project IFMAE is funded for the period 01/01/2013 - 31/12/2015. Project IFMAE Coordinator is European Network of Forensic Science Institutes (ENFSI).

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forensic examinations. Promotion of cooperation between various European forensic science institutes through the exchange of the best practices ensures that forensic methods are continuously reviewed and updated. As a result of the IFMAE Project, Best Practice Manuals, covering different areas of activities, will be produced [4].

II. Vision for European Forensic Science 2020 leads towards Unified Forensic Science

EU Council stressed the ambition to create by 2020 a European Forensic Science Area that will be an area where routine forensic processes for collection, processing, use and delivery of forensic data are based on equivalent minimum standards of forensic science, and where providers of forensic services work on the basis of a common approach to the implementation of such standards, that fosters closer cooperation between them and the systems of criminal justice, laid down in Draft Conclusions of the Council on the vision for European Forensic Science 2020 including the creation of a European Forensic Science Area and the development of forensic science infrastructure in Europe (Vision for European Forensic Science 2020) [5] dated December, 2011.

Additional objectives stipulated in the Vision for European Forensic Science 2020 are following:

- to support and facilitate cooperation between Member States in forensic science and encourage sharing of results of Forensic Science activities thus promoting the quality of Forensic Science,
- to maintain and improve the quality of forensic science in individual Member States through the measures set out in the annex,
- to support the Member States in developing approaches which foster closer cooperation between their individual systems of criminal justice and the providers of forensic services [5].

Therefore the need to define commonly accepted minimum standards of Forensic Science for collection, processing, use and delivery of forensic data including *inter alia* data on DNA profiles, as well as dactyloscopic and other biometric data, and to equip the EU to meet the new challenges that it is facing in the field of high tech and cybercrime is emphasized as well [5].

Having considered the above mentioned issues, EU Council approved a Vision For European Forensic Science 2020 which states that in order to foster cooperation between the police and judicial authorities across the EU with a view to creating a European Forensic Science Area by 2020, "Member States and the Commission will work together to make progress in the following areas, aiming to ensure the even-handed, consistent and efficient administration of justice and the security of citizens:

- accreditation of forensic science institutes and laboratories;
- respect for minimum competence criteria for forensic science personnel;
- establishment of common best practice manuals and their application in daily work of forensic laboratories and institutes;
- conducting proficiency tests/collaborative exercises in forensic science activities at the international level;
- application of minimum quality standards for scene-of-crime investigations and evidence management from the crime scene to the court room;
- recognition of equivalence of law enforcement forensic activities with a view to avoiding duplication of effort through cancellation of evidence owing to technical and qualitative differences, and achieving significant reductions in the time taken to process crimes with a cross-border component;
- identification of optimal and shared ways to create, update and use forensic databases;
- use of advances in forensic science in the fight against terrorism, organised crime and other criminal activities;
- forensic awareness, in particular through appropriate education and training of the law enforcement and justice community;
- research and development projects to promote further development of the forensic science infrastructure."[5]

EU Council also pays attention to the need to pursue the goal set in Council Framework Decision 2009/905/JHA of endowing the EU with a modern, world-class forensic infrastructure capable of supporting cross-border cooperation, in conjunction with legal and non-legal measures, and guaranteeing a common high quality level of Forensic Science, as well as investing in research and the development of new technologies and innovative products under the Specific Programme on inclusive, innovative and secure societies– Horizon 2020 Multiannual Framework Programme.

Also, a fact that the European Network of Forensic Science Institutes (ENFSI) is an important platform for efficient knowledge exchange, with a view to developing minimum quality requirements, facilitating international collaboration and identifying important systemic needs for the forensic community is not left out of consideration of EU Council. Therefore, EU Council Invited the Member States and the Commission, in close cooperation with Europol, ENFSI and other such international organisations as Member States consider appropriate in order to present by the end of June 2013 a detailed action plan to implement the vision for European Forensic Science 2020 set out in the annex, taking into account the final project report "Safeguarding the use of expert evidence in the European Union" (JLS/2006/AGIS/058), the final project report "Study of the obstacles to cooperation and information-sharing between forensic science laboratories and other relevant bodies of different Member States and between the latter and counterparts in third countries" (JLS/D1/2007/025), and the Green Paper on obtaining evidence in criminal matters from one Member State to another and securing its admissibility (17691/09 COPEN 249 JAI 935) [5].

However, a deep scientific research on the mechanism of European Forensic Science 2020 vision is still absent. Only

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initiations of individual ENFSI researches are present and the researches focus basically on problems of forensic examination. In our opinion, the concept of Forensic Science and its system should be researched and analysed in the first place, as it is different in different EU member states. Therefore, the legal regulation of application of Forensic Science methods is different in individual member states. On the other hand, research in Forensic Science in non EU Member States in Eastern Europe and specifically in Countries of Commonwealth of Independent States is obscure in the EU. Moreover, the possibility of incorporation of research conducted in non EU member states is not considered in the creation of European Forensic Science Area. Meanwhile, it is important to take into account the need of integral research in public security because of the process of globalization.

The increasing crime rate is a constant phenomenon not only in the EU but also in the rest of the world. Meanwhile, the domestic policy of EU Member States on fight against crime is insufficient due to rapidly growing cross-border crime. Hence, it is obvious that serious international actions should be taken to ensure security, justice and freedom in the EU. Particularly, the significant role of Forensic Science and importance of common actions of Member States in cooperation of the police and judicial system in the fight against crime was emphasized by the Council of European Union (EU Council) in Draft conclusions of the Council on the vision for European Forensic Science 2020 including the creation of a European Forensic Science Area and the development of forensic science infrastructure in Europe [5]. Consequently, EU Council reached the decision to create European Forensic Science Area, that "will be an area where routine forensic processes of the collection, processing, use and delivery of forensic data are based on equivalent minimum standards of forensic science, and where providers of forensic services work on the basis of a common approach to implementation of these standards that fosters closer cooperation between them and the criminal justice systems [5], by 2020, as well as, "to foster the development of Forensic Science infrastructure in Europe"[5]. Accordingly, as problems of institutional crime investigation system and crime investigation are unique in every Member State, all of them were entitled to prepare individual action plans for implementation of the Vision for European Forensic Science 2020.

The vision for European Forensic Science 2020 is just short guidelines implementation of which allows a lot of space for interpretation. As Member State has a unique Forensic Science system, each sees different reasons for black spots in the work of Forensic Science and criminal justice institutions. Bearing in mind the abovementioned problems, the research done in Lithuania and good practice of the United States of America (USA) and the Netherlands in finding and suggesting ideas to tackle inefficiency problems in Forensic Science and criminal justice institutions and, a team of Lithuanian researchers have joined together in the project "Conception of the vision for European Forensic Science 2020 implementation in Lithuania (EUROVIFOR)"[3] to continue the abovementioned research on improving Lithuania's system of criminal justice and its harmonization with the common vision of European Forensic Science 2020. It could be assumed, that the planned activities of the EUROVIFOR Project reflect challenges that are faced in most of Member States during the process of implementation of vision for European Forensic Science 2020. Therefore, it is relevant to introduce them shortly.

III. Situation in Lithuania

Obviously, the creation of common European Forensic Science Area should be a subject matter of joint international scientific projects. Thus, experience in research projects and academic potential of scientists from individual Member States would be relevant. Lithuania's contribution to researches and academic potential of Forensic Science will be described by a short overview of recent interdisciplinary scientific researches and scientific programs of Mykolas Romeris University in the field of Forensic Science.

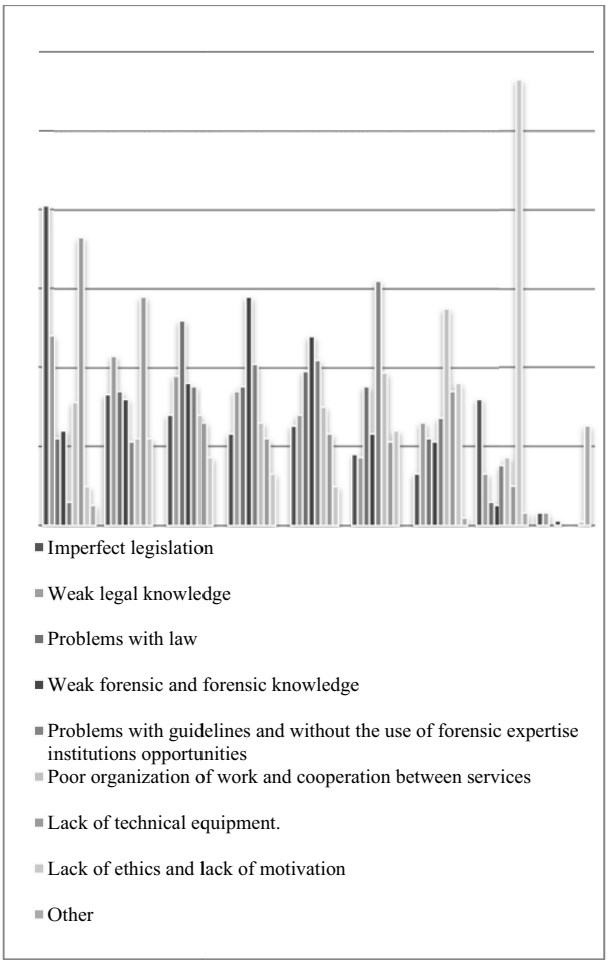


Fig. 1 Reasons for inefficient crime investigation indicated by Lithuanian police officers

[3] The Project is funded for the period of 1 March 2014 - 31 December 2016.

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Research on criminality in Lithuania was carried out under the scientific program "Criminality and Criminal Justice" in 1994 – 1997. It was the first extensive research in the field of Forensic Science in Lithuania done after restoration of its independence. The research successfully forecasted changes in crime rate for the forthcoming period and suggested major aids of crime prevention and crime control, and also proposed basic strategies of crime investigation based on the data collected in researches done in the field of Forensic Science and Criminology.

Another important research in Forensic Science was research named "The Modern Conception of Crimes Investigation and its assurance by measures of Forensic Science and Criminal procedures" conducted under the scientific program "The Dynamics, Prognosis of Criminality in Lithuania and Modern Concept of Forensic Science".

The concept of special knowledge and its use in criminal procedure was researched in 2005 – 2008 by scientists of Mykolas Romeris University [6]. Respondents of the research included officials of pre-trial institutions, Prosecution Service, expert institutions, courts and the Bar association. About 693 questionnaires were collected from the whole of 1 000 distributed to the respondents 1 per cent of which were employees of courts, 4 per cent – employees of the Prosecution Service, 14 per cent – officers of pre-trial institutions, 7 per cent – employees of expert institutions, 58 per cent – policeman, 1 per cent – employees of state government institutions, 1 per cent – members of the Bar Association, 14 per cent – employees of other institutions. Results of the research (see Fig. 1) reveal that respondents identify the need to strengthen studies in Forensic Science and other disciplines of Criminal Law at universities and trainings in spite of good evaluation of their skills in the areas. Strengthening of Forensic Science at universities is crucial as it the studies precondition poor results of crime investigation by the police, Prosecution Service, courts, expert and other institutions. Among other reasons of poor performance in crime investigation police officers point out deficiencies in legislation (29 per cent), defective organization of work procedures and problems in cooperation of responsible institutions (26 per cent), poor legal knowledge (17 per cent), poor skills in Forensic Science (9 per cent), problems in implementation of laws (8 per cent), lack of ethics and motivation (4 per cent), problems for implementation of Forensic Science recommendations (best practice manuals) and insufficient use of capacities of Forensic Science institutions (2 per cent).

In cooperation with Vilnius University and Forensic Science Centre of Lithuania, scientists of Mykolas Romeris University conducted a project "The threats of criminality and modern technologies for management of human safety". One of the key objectives of the project was to do a research on the meaning of security of people and their environment through the analysis of problems in activities of law enforcement bodies and other institutions involved in crime investigation and crime prevention, and to propose measures and recommendations to improve practical activities of the institutions. It is impossible to ensure security of individuals without identification of real and implied threats. Also, along with a clear strategy, effective recognition of crimes in knowledge society needs pragmatic application of relevant management technologies.

It is obvious that security of people could be granted by improving the effectiveness of pre-trial investigation in the first place. Therefore, the authors suggest preparing a model of an algorithmic system of crime investigation. The recommended model should be adapted and used in practice to investigate crimes. The system should incorporate recent achievements of Forensic Science, legal basis of crime investigation and applicable practice of crime investigation.

The proposal to improve activities of Forensic Science agencies by combining them into cooperating institutes is based both on researches conducted in Lithuania and international practice. Also, the successful implementation of the aforementioned project grounded a path for the next scientific program "The scientific conception of special knowledge application in the investigation of crime" [7].

The research revealed that the problems that arise in accreditation of Forensic Science institutions and certification of their personnel should be addressed urgently, especially because they are now directly associated with requirements of Vision for European Forensic Science 2020 and Council Framework Decision 2009/905/JHA of 30 November 2009 on Accreditation of forensic service providers carrying out laboratory activities [8]. It should be noted that some of Lithuanian Forensic Science institutions are already under the process of accreditation. For example, 13 expert investigative techniques have been accredited in Lithuania's Forensic Science Centre. The institution has been certified to meet LST EN ISO/IEC 17025 standard applicable in analyses of stamps, stamp impressions, fibres, traces of pneumatic tyres, handwritten texts, signatures, fingerprints, paints and bullets[4]. Accreditation of other Forensic Science institutions is still due [9].

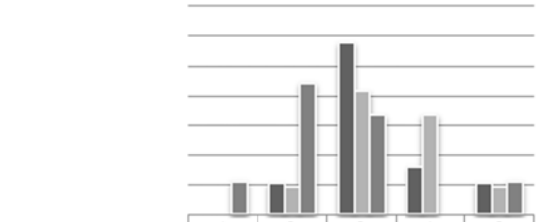
We also took active part in a working group formed by Lithuanian Prime Minister[5]and interviewed managers of expert agencies, experts and pre-trial investigation officers to identify the following problems of Forensic Science and Forensic expertise in the Lithuania:

- Unequal possibilities of involved parties to use special knowledge in criminal proceedings (see Fig. 2).
- Lack of methodical provisions for Forensic Science (see Fig. 3).
- Limited human resources (systems of specialist training and professional development are different and unregulated) (see Figs. 4 and 5).
- Uncertain administration of Criminal Investigation (see Fig. 6).
- Lack of orientation to public needs, departmental dependence of expert agencies, influence of Coordinating Council (see Figs. 7 and 8).
- Limited integration of Lithuanian scientific research with researches of international organizations (see Figs. 9-11).

[4]Accreditation certificate No: LA.01.107, valid until: 2015-09-02.

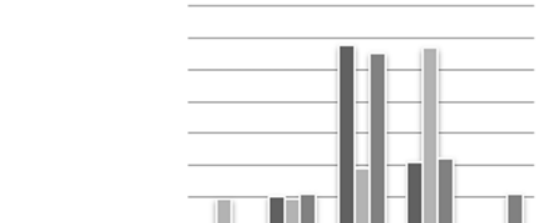
[5] Work group was formed by ordinance No 33 of Lithuanian Prime Minister in 28 January 2010.

- Incoherent reforms of law enforcement institutions (see Fig. 12).
- Actual problems of legal regulation (see Fig. 13).



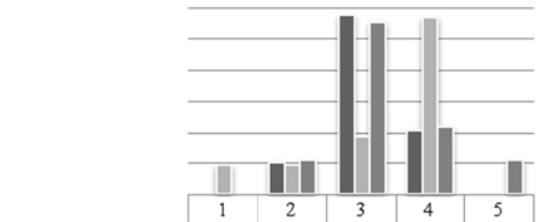
	1	2	3	4	5
Public prosecutors	0%	10,50%	57,90%	15,80%	11%
Experts	0%	10%	41,60%	33,30%	9,50%
Pretrial investigators	11%	44%	33,30%	0,00%	11,10%

Fig. 2 Assessment of possibilities to use special knowledge for all parties involved into criminal proceedings (prosecution and defense) are equal (*1point - unequal possibilities, 5 points - equal possibilities*)



	1	2	3	4	5
Public prosecutors	0%	10,50%	57,90%	21,10%	0%
Experts	10%	10%	19,00%	57,10%	0%
Pretrial investigators	0%	11%	55,60%	22,20%	11%

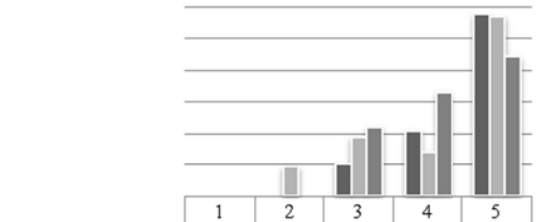
Fig. 3 The assessment of methodological material suitability (*1 point represents the worst assessment, 5 points - the best)*



	1	2	3	4	5
Public prosecutors	0%	10,50%	57,90%	21,10%	0%
Experts	10%	10%	19,00%	57,10%	0%
Pretrial investigators	0%	11%	55,60%	22,20%	11%

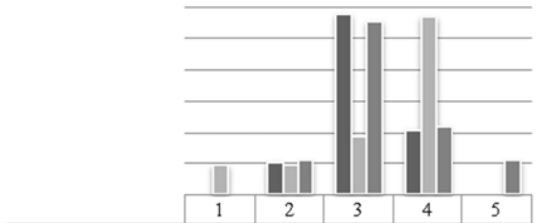
Fig. 4 Assessment of experience, human resources and training (*scaled from 1 to5*)

As one can see, 44 per cent of the surveyed pre-trial investigators argue that the parties involved into criminal proceedings have limited possibilities to use special knowledge and feel their authority is unreasonably curbed. Interviews of prosecutors and experts reveal similar results. The respondents also pointed out that their authorization to use special knowledge is unequally shared.



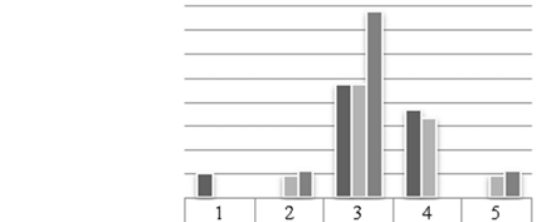
	1	2	3	4	5
Public prosecutors	0%	0,00%	10,50%	21,10%	58%
Experts	0%	10%	19,00%	14,30%	57,10%
Pretrial investigators	0%	0%	22,20%	33,30%	44,40%

Fig. 5 Assessment of work conditions, wages and motivation of professionals and scientists (*scaled from 1 to5*)



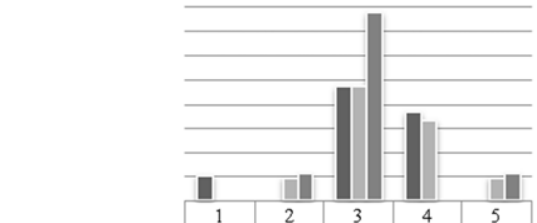
	1	2	3	4	5
Public prosecutors	0%	10,50%	57,90%	21,10%	0%
Experts	10%	10%	19,00%	57,10%	0%
Pretrial investigators	0%	11%	55,60%	22,20%	11%

Fig. 6 Assessment of administration of forensic examinations (*1 point represents the worst assessment, 5 points - the best*)



	1	2	3	4	5
Public prosecutors	11%	0%	47,40%	36,80%	0%
Experts	0%	10%	47,60%	33,30%	10%
Pretrial investigators	0%	11%	77,80%	0%	11%

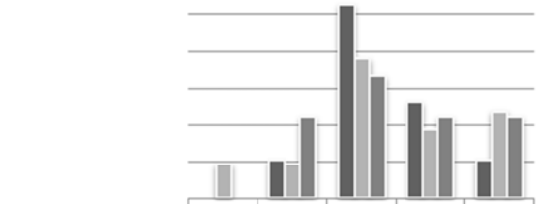
Fig. 7 Assessment of policy orientation (*scaled from 1 to5*)



	1	2	3	4	5
Public prosecutors	11%	0%	47,40%	36,80%	0%
Experts	0%	10%	47,60%	33,30%	10%
Pretrial investigators	0%	11%	77,80%	0%	11%

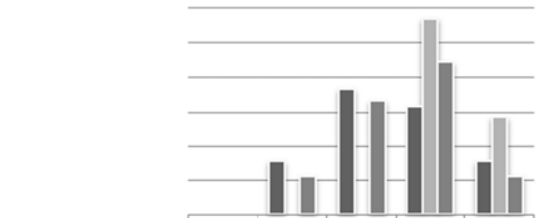
Fig. 8 Assessment of Court expert coordination board (*scaled from 1 to 5*)

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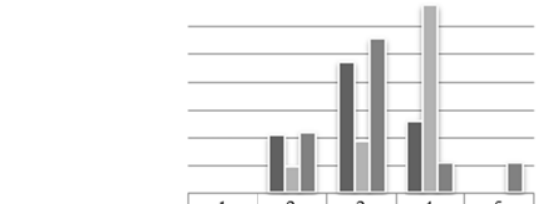
	1	2	3	4	5
Public prosecutors	0%	11%	52,60%	26,30%	11%
Experts	10%	10%	38,10%	19,00%	23,80%
Pretrial investigators	0%	22%	33,30%	22,20%	22,20%

Fig. 9 Assessment of forensic research (1 point represents the worst assessment, 5 points - the best)



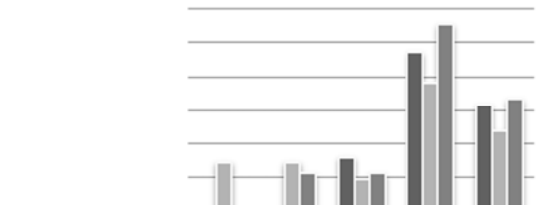
	1	2	3	4	5
Public prosecutors	0%	16%	36,80%	31,60%	16%
Experts	0%	0%	0%	57,10%	28,60%
Pretrial investigators	0%	11%	33,30%	44,40%	11,10%

Fig. 10 Assessment of research integration with international scientific research (*scaled from 1 to5*)



	1	2	3	4	5
Public prosecutors	0%	21%	47,40%	26,30%	0%
Experts	0%	10%	19,00%	67,70%	0%
Pretrial investigators	0%	22%	55,60%	11,10%	11,10%

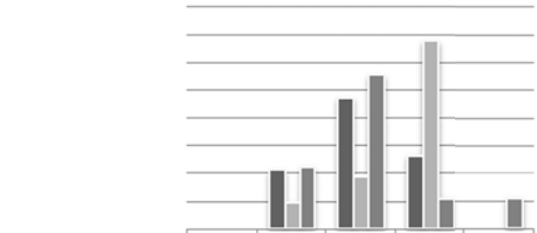
Fig. 11 Assessment of the growth of the gap between Lithuanian and EU scientific and Forensic Science research (*scaled from 1 to5*)



	1	2	3	4	5
Public prosecutors	0%	0%	15,80%	47,40%	32%
Experts	14%	14%	10%	38,10%	23,80%
Pretrial investigators	0%	11%	11,10%	55,60%	33,30%

Fig. 12 Assessment of incoherence of reforms in law enforcement institutions (*scaled from 1 to5)*

All respondents agreed that reforms of Lithuanian law enforcement institutions are not compatible with each other.



	1	2	3	4	5
Public prosecutors	0%	21%	47,40%	26,30%	0%
Experts	0%	10%	19,00%	67,70%	0%
Pretrial investigators	0%	22%	55,60%	11,10%	11,10%

Fig. 13 Assessment of legal regulation of the use of special knowledge (*1 point represents the worst assessment, 5 points - the best*)

The graphs show that Prosecutors who, in accordance with Lithuanian Code of Criminal Procedure, are entitled to organize and direct pre-trial investigations, agree that the regulation of the use of special knowledge is vague.

Our researches correlate with results of ENFSI research [10]. The study identified a number of barriers for achieving good results in criminal investigations. One of such barriers is frequent misunderstanding between pre-trial investigators, courts and experts. For example, prosecutors fail to interpret data provided by experts. Therefore, it is difficult for them to understand the research part of expertise. On the other hand, judges are often unaware of methods used in expertise. As a result, problems caused by insufficient use of possibilities of modern expertise arise in criminal investigation.

We also performed a special international study to assess attitudes towards problems in international cooperation Forensic Science institutions. The questionnaires for Forensic Science specialists were distributed in international Symposium of Forensic Science in Bratislava[6] on 27-30 of September 2011. 130 questionnaires were distributed to receive received 89 responses from the target group including experts, forensic scientists and practitioners from Austria, Australia, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, France, Germany, Greece, Hungary, India, Ireland, Latvia, Lithuania, Montenegro, the Netherlands, Norway, China, Poland, Portugal, Macedonia, Romania, Russia, Slovakia, South Africa, Spain, Turkey, Ukraine, the United Kingdom and the United States.

Analysis of the survey results provided an opportunity to assess the development of Forensic Science and the importance a common strategy and standards for preparation of forensic experts (academicians and practitioners).

The majority of respondents (77 per cent) gave positive answers to the question „Are there forensic science education programs and policies?" (see Fig. 14). Only 20 per cent of the

[6]10th International Symposium of Forensic Sciences, 2011 09 27-31, Bratislava.

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respondents gave negative answers and 3 per cent had no opinion. Hence, a purposeful development of Forensic Science could be assumed. Therefore, preparation of a common strategy of training programs for Forensic Science would allow performance of deeper analyses of Forensic Science, determination of the level of development of individual parts in the science, determination of the place, position and importance of Forensic Science in activities of law enforcement bodies. Moreover, the uniform strategy of scientific and educational programs enables coordination of implementation of new scientific achievements in practice and usefulness of the new research.

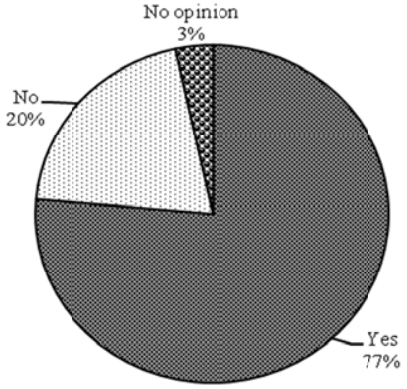


Fig. 14 Responses to the question "Are there forensic science education programs and policies?"

The opinions of respondents on the question „Is there an authority in your country, which supervises accreditation of training and forensic standards in higher education?" divided almost equally (see Fig. 15) between positive (34 per cent), negative (36 per cent) and no opinion (30 per cent of respondents).

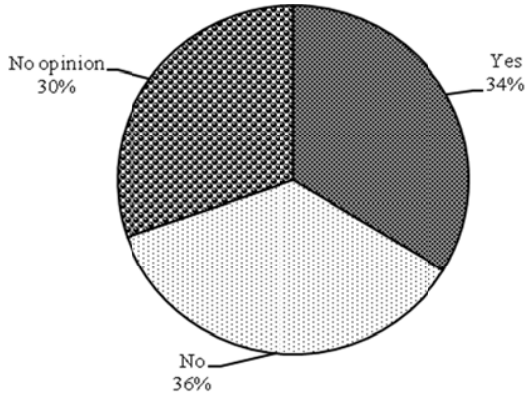


Fig. 15 Responses to the question "Is there an authority in your country, which supervises accreditation of training and forensic standards in higher education?"

The results show that training in Forensic Science needs further amendments in its regulation. It could be argued, that accredited standards of Forensic Science and programs of training are too few as only harmonized and coordinated submission of Forensic Science data could be beneficial.

More than a half (66 per cent) of respondents indicated that Coordination Council of experts (or a similar body) exists in their country (see Fig. 16). On the other hand, 19 percent of respondents submitted negative responses and 15per cent had no opinion on the question. The results show that activities of experts are virtually uncontrolled. As a consequence, insufficiently or improperly regulated activities are ineffective, especially because of the rapid development of expertise techniques that may currently be applicable not only in criminal matters but also in civil litigations and administrative proceedings.

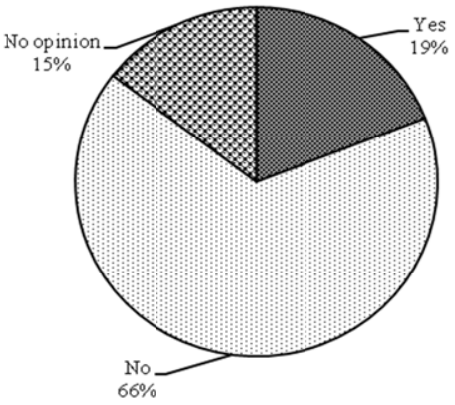


Fig. 16 Responses to the question "Is there Coordination Council of experts (or a similar body) in your country?"

The vast majority of respondents (83 per cent) indicated that certain scientific forensic institutions (research institute, university department, etc.) are present in their countries (see Fig. 17). Only 10 per cent of the responses were negative and 7 per cent of the respondents had no opinion.

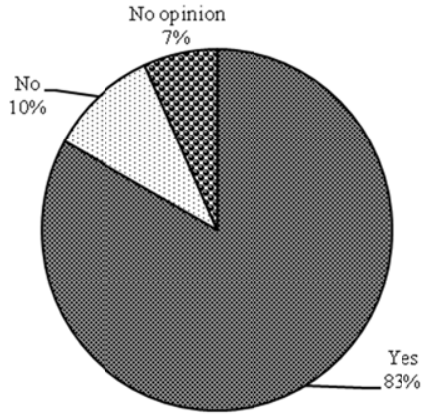


Fig. 17 Responses to the question "Is there a scientific forensic institution (research institute, university department, etc.) in your country?"

Therefore, it is obvious that scientific forensic institutions are present in the majority of countries and forensic Science is seen as an individual, specific branch of science.

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All things considered, we are convinced that a reform of Forensic Science institutions should start with development of science and implementation of scientific results into practice. In fact, criminality as a social phenomenon is being researched in a number of European countries at national and international levels. Moreover, more and more attention is paid to scientific researches in forms of criminal activities, analysis of mechanisms of criminal offences as well improvement of investigation of crimes.

For example, Germany has Forensic Science Institutes along with technical forensic institutes (analogues of Lithuanian Forensic Science Centres). Such scientific institutes deal with criminality and its individual forms and evolution, dynamics, forecasting, improvement and creation of criminal investigation methods.

IV. EUROVIFOR Project

A diverse team of Lithuanian researchers have joined together to conduct a research project "Conception of the vision for European Forensic Science 2020 implementation in Lithuania (EUROVIFOR)" (Project).

The objective of the Project is to provide a conception of the vision for European Forensic Science 2020 implementation in Lithuania based on scientific studies. This objective incorporates the following tasks:

1) To analyse and evaluate the quality of institutional efficiency and proceedings of the forensic investigation system. As a result, the effectiveness of the system of forensic institutions, institutional accreditation, application of minimum competence requirements, the status of didactics of forensic science will be assessed. Also, legal, managerial and organization analysis of application of minimum quality standards for crime scene investigations and dealing with the evidence from crime scenes in the courtroom will be carried out.
2) To analyse achievements (knowledge) of criminalistics in the field of investigation of terrorism, organized crime, cyber crime and trafficking in human beings – modern European issues associated with creation of European Forensic Science Area. As a result, strengths and problems of investigation of the above mentioned crimes in Lithuania will be identified. In addition, the best practices of forensic institutions of EU Member States that could be effectively applicable to the creation of the model of vision for European Forensic Science 2020 implementation in Lithuania will be found.
3) To analyse the existing concepts of Forensic Science systems and to identify problems of harmonization of criminalistics. As a result, a comparative study of legal regulation will be carried out, the areas of cooperation will be determined and the prospects of database management will be defined.

We performed a short pilot survey in identifying the most obvious problems in implementation of the Forensic Science vision 2020 in Lithuania. The results of the survey show that the most important problems are following: 1) deficient competence of personnel of forensic science and criminal justice system; 2) Forensic Science is only an optional subject for Law students and the course of training, including only a few practical tutorials, is too short; 3) a chaotic system of Forensic Science institutions with no coordination of institutions and provided scientific recommendations; 4) Insufficient funding for crime investigation. 5) Lack of researches in prospects of European Forensic Science vision 2020 implementation; and etc. Apart from to the abovementioned problems, solutions to problems the identification of which requires deeper analyses of forensic science in Lithuania are going to be provided by creating a model of vision for European Forensic Science 2020 implementation in Lithuania by 2016. The conducted researches will presumably contribute to improving of the national and EU Forensic Science and crime investigation system.

The uniqueness of the Project manifests in several points. Firstly, the conception of Forensic Science has not become a subject of complex scientific research in Europe yet. Our research will concentrate on a wider vision of European Forensic Science 2020. It also involves researchers of East European countries. These countries have a wider concept of Forensic Science than a mere application of criminalistics techniques. Secondly, our researches are likely to differ from ENFSI proposals because ENSFI evaluates Forensic Science only in the context of expert researches excluding forensic tactics and methodologies applicable in individual types of crime. Thirdly, our researches will differ from Project IFMAE as well. Project IFMAE is designated for preparation of Best Practice Manuals by analyzing experience of individual Member States whereas our Project is of a wider scope and preparation of Best Practice Manuals applicable precisely to the Lithuanian model of European Forensic Science Vision 2020 will be among the abovementioned tasks. Consequently, proposals how to combine approaches to the concepts and systems of Forensic Science in individual Forensic Science schools - Russian, German, Anglo-Saxon, Roman – are going to be presented. Proposals how to reach a common opinion about policies of harmonization of legal norms are going to be made as well. As a result, theoretical and methodological basics of the concept will be introduced. The Project is also unique because it is going to provide not only quality standards for expert institutions but also offer a model of quality standards for crime scene investigation, describing forensic activities from crime scene to the courtroom. The content of Forensic Science studies in the syllabus of university education and individual specializations is going to be based on peculiarities of crime investigation process and the needs of law enforcement institutions. The minimum competence requirements for criminal justice officers are going to be formulated as well. The researches will allow planning of common international projects in Horizon 2020 Multiannual Framework Programme (Horizon 2020). Unlike in previous research programs of European Commission, Forensics is one of the four parts of Horizon 2020 called "Fight against Crime and Terrorism" [11]. The topics of Forensics Science in Horizon 2020 are following: 1) "Tools

and infrastructure for the fusion, exchange and analysis of data including forensic data on cyber crime"; 2) "Advanced easy to use in situ forensic tools"; 3) "Mobile, remotely controlled technologies to examine a crime scene in case of an accident or a terrorist attack involving CBRNE materials"; 4) "Internet Forensics to combat organized crime" [12].

V. Conclusions

Creation of a conception of European Forensic Science vision 2020 implementation in Lithuania is a very ambitious task for Lithuanian scientists. The researches in application of special knowledge in investigation of crimes and analysis of forensic, procedural and organizational problems would lead to improvement and deployment of the most advanced technologies in the process of criminal investigation and development of its legal basis. Moreover, it would help to create an effective scientific and practical system of expert institutions, to avoid duplication of functions, to save costs and, as a matter of fact, eliminate potential departmental interest.

We think that majority of tasks of Vision for European Forensic Science 2020 could be solved only by joint scientific research involving scientists of various competence and interests. With its four topics on Forensic Science, Horizon 2020 could be a program motivating scientists to consolidate in searches of the best way of Vision for European Forensic Science 2020 implementation in Europe. Lithuanian scientists are going to take an active part in this program and are prepared for discussions and proposals about the overall research work.

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[11] *Horizon 2020. Call for Fight against Crime and Terrorism is divided in forensics, law enforcement capabilities, urban security and Ethical / societal dimension.*

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