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The current status of forensic science laboratory accreditation in Europe

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Abstract

Forensic science is gaining some solid ground in the area of effective crime prevention, especially in the areas where more sophisticated use of available technology is prevalent. All it takes is high-level cooperation among nations that can help them deal with criminality that adopts a cross-border nature more and more. It is apparent that cooperation will not be enough on its own and this development will require a network of qualified forensic laboratories spread over Europe.

It is argued in this paper that forensic science laboratories play an important role in the fight against crime. Another, complimentary argument is that forensic science laboratories need to be better involved in the fight against crime. For this to be achieved, a good level of cooperation should be established and maintained. It is also noted that harmonization is required for such cooperation and seeking accreditation according to an internationally acceptable standard, such as ISO/IEC 17025, will eventually bring harmonization as an end result.

Because, ISO/IEC 17025 as an international standard, has been a tool that helps forensic science laboratories in the current trend towards accreditation that can be observed not only in Europe, but also in the rest of the world of forensic science. In the introduction part, ISO/IEC 17025 states that ''the acceptance of testing and calibration results between countries should be facilitated if laboratories comply with this international standard and if they obtain accreditation from bodies which have entered into mutual recognition agreements with equivalent bodies in other countries using this international standard.'' Furthermore, it is emphasized that the use of this international standard will assist in the harmonization of standards and procedures.

The background of forensic science cooperation in Europe will be explained by using an existing European forensic science network, i.e. ENFSI, in order to understand the current status of forensic science in Europe better. The Council of Europe and the European Union approaches to forensic science will also be discussed by looking at the legal instruments and documents published by these two European organizations. Data collected from 52 European forensic science laboratories will be examined and findings will be evaluated from a quality assurance and accreditation point of view. The need for harmonization and accreditation in forensic science will be emphasized. The steps that should be taken at the European level for increasing and strengthening the role of European forensic science laboratories in the fight against crime will be given as recommendations in the conclusion.

Keywords: Forensic science; Accreditation; ISO/IEC 17025

1. Introduction

In 2004–2005, in the United Kingdom, 571 rape cases, 165 murder/manslaughter cases, 4465 theft-from-a-vehicle cases, and 16.059 burglary cases were linked to one or more suspects, thanks to forensic DNA technology.[1] It is quite clear that approximately 48 rape, 14 murder, 372 theft-from-a-vehicle, and 1338 burglary cases were solved each month. But, are the measurements and calibrations used in such technology scientifically valid? Are laboratories using this technology competent and able to generate technically valid results? What criteria should be applied for European forensic science laboratories so as to ascertain their competence in an area of freedom, security, and justice?

The above figures taken from the United Kingdom's National DNA database annual report clearly show that forensic DNA technology plays an active role in the fight

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against crime, as do all the other forensic fields of expertise. In order to ''play it right'', forensic science laboratories should demonstrate that what they perform is scientifically well-established and they are competent in doing it. This is why, they need accreditation and it happens to be ISO/IEC 17025 standard that they should seek since it covers general requirements for the competence of any test and/or calibration laboratory.

The European Network of Forensic Science Institutes (ENFSI) has amended its framework for membership in 2004 and stated that, in order to be an eligible applicant, ''the forensic institute shall have achieved an accreditation or documented progress in quality assurance with a clear plan to obtain accreditation in the near future.''[2] Then, in 2005, ENFSI made the existing requirements in the ''policy document on the standards of accreditation'' more severe, by stating that ''all member laboratories should have achieved or should be taking steps towards ISO/IEC 17025 compliant accreditation for their laboratory testing activities.''[3]

According to a recent survey by the ENFSI standing committee on Quality and Competence (QCC), there are 13 accredited ENFSI laboratories.[4] The most common standard is the ISO/IEC 17025 issued by International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC).[5] The fact that there are still 40 non-accredited ENFSI laboratories shows that some sort of a harmonized path towards accreditation remains to be established.

It is important to emphasize here that this paper deals with the accreditation of forensic science laboratories only, not of forensic scientists/experts. Although being a frequently debated and interesting topic among forensic science communities across Europe, it might be another field of research unto itself. Rather, this study will try and look into how far are the European forensic science laboratories into the issue of accreditation. At the end, some recommendations, at European level, will be formulated to help increase the number of accredited European laboratories and, therefore, strengthen the role of forensic science laboratories in the fight against crime.

2. Materials and methods

In order to better understand the current situation of forensic science laboratories in Europe, answers given to a questionnaire that was sent out to members of ENFSI in 2004 were used. It is important to note here that the questionnaire was originally designed to find out about the current status of ENFSI member laboratories by the ENFSI Secretariat. Therefore, we did not have any control on the design of this questionnaire. Rather, the data compiled from the replies to the questionnaire were used for analysis.

Out of 53 ENFSI member forensic science laboratories, replies from 52 were used in this study since one answer had not been received until data analysis began. For the issues of privacy and secrecy, names of the laboratories and their respective countries are not given.

Table 1
Quality assurance system availability

	Frequency	Percentage
Yes	26	50.0
No	3	5.8
Being developed	23	44.2
Total	52	100.0

The questionnaire asked about several issues including: status in criminal justice system, availability of a quality assurance system, status/expected date of accreditation, name of the accreditation standard, number of staff and number of cases examined in 2004. The data based on the issues listed here became the variables that were chosen for this study.

Statistical package for the Social Sciences (SPSS)[6] software was used to manage and summarize these data. All the data from the questionnaires were compiled in Microsoft Excel data sheets first. Then, the variables we chose to examine in depth and compare were transferred to SPSS for further analysis based on a coding scheme.[7]

3. Results and discussion

After having formulated – as the formal ENFSI policy – the importance of being accredited, it might be insightful to verify what position the ENFSI member laboratories take. In Table 1, we see that more than 94% of the ENFSI member laboratories already have a system of quality assurance or are trying to develop one. This is a good signal especially if we consider that, following its constitution[8] and the policy document, ENFSI is coaxing its members into achieving accreditation. The trend here looks promising and shows how willing and motivated the laboratories happen to be towards using a quality assurance system. Assuming that these laboratories will go one step ahead and seek accreditation, it should also be taken into consideration that one of the first necessities when one laboratory decides to take the path towards accreditation is not a big budget or lots of personnel, but motivation and determination.[9]

Nevertheless, before taking the motivation level we derived from Table 2 at face value, we need to take a look at the intended and estimated date of achieving accreditation. According to Table 2, it seems that 34.6% of the 52 laboratories intend to achieve accreditation by 2009. 32.7% of the laboratories are already accredited; another 32.7% did not provide any schedule for their accreditation plans. This fact can be regarded as some form of hesitation, which is inconsistent with our finding of motivation based on Table 1. Since the questionnaire did not ask why the laboratories do not have a plan for accreditation, but develop quality assurance system all the same, we cannot tell for sure if this fact is attributed to just a simple hesitation or some other factor like budget constraints or staff/management resistance. A more detailed questionnaire probing such concerns might bring some more insight on this issue.

[2] Ref. [9].
[3] Ref. [10].
[4] Ref. [19].
[5] Ref. [17].
[6] Ref. [14].
[7] The coding scheme can be found at http://ekremalkoc.tripod.com.
[8] Ref. [8].
[9] J.J. Cassiman, June 29, 2005, personal communication.