

## **SUMMARY**

### **Strengthening the Evaluation of Forensic Results across Europe (STEOFRAE)**

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Project Coordinator	European Network of Forensic Science Institutes (ENFSI)
Project Partners	<ul style="list-style-type: none"><li>• Criminalistic Service of the Civil Guard (CSCG-Madrid) ES</li><li>• Eolaiocht Fhoireinseach Eireann (EFE-Dublin) IE</li><li>• Forensic Science Institute (BKA-Wiesbaden) DE</li><li>• Forensic Science Service (FSS-London) UK</li><li>• Forensic Sciences Institute of the French Gendarmerie (FSIFG-Rosny Sous Bois) FR</li><li>• Institute of Forensic Research (IFS-Krakow) PL</li><li>• Institute of Forensic Sciences (IFS-Budapest) HU</li><li>• LGC Forensics (LGCF-Teddington) UK</li><li>• National Bureau of Investigation Forensic Laboratory (NBIFL- Vantaa)</li><li>• National Forensic Science Institute (INPS- Ecully) FR</li><li>• National Institute of Criminalistics and Criminology (INCC-Brussels) BE</li><li>• National Laboratory of Forensic Science (SKL-Linkoping) SE</li><li>• Netherlands Forensic Institute (NFI-The Hague) NL</li><li>• Innsbruck Medical University, Innsbruck AT</li><li>• University of Edinburgh, Edinburgh UK</li><li>• University of Linkoping, Linkoping SE</li><li>• University of Strathclyde, Glasgow UK</li></ul>
Associate Partners	<ul style="list-style-type: none"><li>• Forensic Science Institute (FSI-Zurich) CH</li><li>• National Criminal Investigation Service (NCIS-Oslo) NO</li><li>• University of Oslo, Oslo NO</li></ul>

#### **Project Description and Context**

The STEOFRAE project was designed to promote best practice in the evaluation and interpretation of the results arising from forensic examinations throughout Europe. The work has made a significant contribution towards the further adoption of common approaches and common standards when using forensic science to fight crime across international borders.

Forensic science remains a key element in the investigation and prosecution of crime across Europe. The cooperative use of forensic science between European countries can only flourish when there is mutual trust in the information exchanged. This applies to the raw forensic data but also applies to the opinions of the experts who evaluate the results. Thus, the effective use of forensic science for international law enforcement needs common standards and approaches throughout the whole forensic process.

Over many years, much work has been directed towards the accreditation of forensic laboratories to international standards (ISO 17025) with much thinking directed towards the quality of the scientific results that are produced. This is, and will remain, a critical factor when considering forensic quality and the exchange of information. Nevertheless, there is a further factor that is of equal importance when considering the exchange of forensic information. This is the evaluation and interpretation of the scientific findings in the context of the specific criminal case being examined. The forensic scientist takes the scientific results and delivers an "expert opinion" as to their meaning and significance. Consistency and quality in the formulation of expert opinion is an important goal in promoting the ready exchange of forensic information across Europe. Clearly, common approaches to the interpretation of a given set of scientific results should point towards the same conclusions when applied to criminal casework. That expert opinion might be delivered to a police officer as a piece of intelligence information when an

unsolved case is being investigated or in might be delivered in a court as “evidence” related to the guilt or innocence of an accused person.. Thus, as well as the forensic scientists themselves, there are many target groups and beneficiaries with an interest in forensic interpretation and the results from this project: Eurojust, judges, prosecutors, lawyers and the police. Furthermore the ultimate beneficiaries will be the delivery of justice for the populations of the EU Member States.

### **Activities and Achievements**

The STEOFRAE project has delivered results across seven specific areas:

1. An ‘ENFSI Guideline for Evaluative Reporting in Forensic Science’ including associated casework examples and a roadmap to implementation. This important document represents a key landmark for European forensic laboratories as they move towards a general shared approach for the evaluation of forensic results. It is the result of ambitious work across a wide range of scientific disciplines and it has application across many different legal and judicial systems. This Guideline has been produced in parallel to training activities for European forensic scientists in modern statistical methods for evaluating forensic results.
2. The design and implementation of a European on-line knowledge examination for competence assessment. The relevant knowledge syllabus represents the basic requirement for all practitioners in all scientific areas. The syllabus has been delivered through two regional seminars, with the second one video recorded for future use. Thus, looking to the future, the on-line training material and the on-line examination will provide straightforward access to candidates from all over Europe. A first cohort of candidates have taken the examination and demonstrated the viability of the new approach.
3. The completion of an important update to the existing on-line ENFSI STR DNA software that is already widely used across Europe for the interpretation of DNA casework results ([www.strbase.org](http://www.strbase.org)). DNA technology is experiencing continuous development and thereby the tools required for forensic interpretation need to develop in parallel.
4. The organisation of a European training seminar about the use of ‘sub-class characteristics’ in firearm investigations. The use of unique marks on ammunition is regularly used for the identification of weapons. However, modern methods of firearm mass production can lead to marks which are not characteristic for the gun itself, but for the tool that was used to produce the gun part with the potential for false identifications. The seminar aimed to promote best practice in weapon identification by spreading knowledge about ‘sub-class characteristics’.
5. The delivery of two workshops to consider the application of modern statistical methods (Bayesian approach) to the interpretation of gunshot residues in forensic casework. The challenges for the wide scale introduction of this approach have been identified.
6. ‘Guidelines on Sampling of Illicit Drugs for Quantitative Analysis’ related to the sampling of bulk illicit drug batches such that the reported quantitative results can be defended as being truly representative of the bulk material. The development of these guidelines has required fundamental scientific work leading to the publication of three papers in scientific journals.
7. The development and evaluation of a pilot proficiency test for the forensic examination of computers where the interpretation of findings can be very complex. The lessons learned will be important for the future implementation of such difficult proficiency tests, which will be essential for maintaining quality standards in this increasingly expanding area of work.

All the results from the STEOFRAE will promote best practice in the evaluation and interpretation of the results from forensic examinations. The impact of the project will be realised in the coming months and years as the tools, guidance and knowledge make their mark across the forensic community.