STANDING COMMITTEE
FOR QUALITY AND COMPETENCE (QCC)

# GUIDANCE ON THE ASSESSMENT OF COMPETENCE FOR FORENSIC PRACTITIONERS

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## Introduction

ENFSI wishes to promote consistent and reliable scientific evidence throughout the whole forensic process from the scene of crime to court. An aim of this is the policy of ENFSI that all member laboratories must have a formal and documented system for the assessment of competence of their forensic practitioners and must accept and abide by the ENFSI Code of Conduct reference number BRD-GEN-003. The competence assurance system shall be an integral part of the quality system according to ISO/IEC 17025 and when applicable also to ISO/IEC 17020.

The CAP group (CAP- Competence Assurance Project) developed guidelines (this guidance document QCC-CAP-006) for the assessment of competence for forensic practitioners to assist ENFSI member institutes to improve their competence assurance systems. This guidance document is based on the outcome of a benchmark exercise involving 9 ENFSI institutes.

Part of the strategy of the CAP group is also to develop examinations to test general forensic knowledge and area specific knowledge. These examinations should be part of the competence assessment within an organisation.

**Contents**

# 1. Aims

The aims of this guidance document are:

1.1 To give an overview of requirements to assess the competence of forensic scientists.

1.2 To outline how to use the performance based standards for forensic science practitioners in the assessment.

1.3 To provide examples of best practice for some aspects in the process and give examples of tools for making the assessment.

# 2. Definitions

**Competence** – the ability to perform the task of a certain role. A competent person has the knowledge and the ability to apply this knowledge, has the skills, the right behaviour and the attitudes for the role. Qualification, experience and training, although important, do not guarantee competence.
Examples of behaviour and attitude in the Performance based standards for forensic practitioners are given in appendix 1.

**Competence Assessment** - a formal assessment to check whether or not an individual meets the standards of performance.

**Assessor** - a person who judges the performance of another person. An assessor should be competent in the area that will be assessed.

**Assessment team** – a team of assessors.

**Peer Review** - review of a case file and report for the reliability and interpretation of the scientific findings.

**Internal audit** - a systematic and independent internal inspection to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives.

# 3. Requirements

The competence assurance system within an organization should be documented.

## 3.1 ENFSI Standards

The key to any system of addressing competence is to define the standards of performance that must be achieved.
The document QCC-CAP-003 Performance Based Standards for Forensic Science Practitioners has been developed for use by all ENFSI forensic science practitioners. These standards define what has to be achieved by the competent practitioner but do not define how. The standards also indicate the knowledge that is required to underpin the standards.
An individual can only be judged competent (or not to have competence) by assessment against the standards.

Chapter 4 outlines how the standards should be used.

## 3.2 Roles of forensic practitioners

Forensic practitioners carry out a variety of roles.
The organisation should define the roles that have been recognised within their organisation.

The CAP group suggests four fundamental roles of forensic practitioners in the forensic process:

- Scene of Crime Examiner – an individual whose primary role is the initial assessment at a crime scene and the subsequent collection of material for a detailed scientific examination.

- Analyst / Assistant – an individual carrying out general casework examinations or analytical tests under the instruction of a Reporting Scientist or Reporting Analyst and who is able to provide information to assist with the interpretation of the tests.

- Reporting Analyst – an analyst responsible in non-complicated cases (e.g. simple drugs analysis), for performing the examination of the items submitted, interpreting the analysis results, writing the analysis report and, if necessary, providing factual evidence for the court.

- Reporting Scientist – the forensic scientist responsible in a particular case for performing or directing the examination of the items submitted, interpreting the findings, writing the report and providing evidence of fact and opinion for the court.

Some practitioners may carry out more than one role and not all roles may be recognised by every organisation.

## 3.3 Areas of competence

Definition of the scope of competence (i.e. area's of competence) is essential to ensure the individual stays within their area of competence.
Assessment of competence (and training) has to be made for the defined roles within the area's of work.

Appendix 2 gives an overview of the defined area's for reporting scientists in different ENFSI Institutes. Also examples of criteria for defining these area's are given.

## 3.4 Procedures for assessment

Procedures for assessment of competence for forensic practitioners should have been agreed on and documented. The procedures for carrying out and recording the outcomes of assessment must be such as to facilitate internal and external verification.
In a lot of forensic laboratories the assessment of reporting scientists is more formal than the assessment of analysts or assistants.

### 3.5 Methods of assessment

The assessment of individuals should be formal and documented.

A range of acceptable assessment methods could include:

- observation of performance e.g. casework conducted under close supervision and questioning for understanding (the so called four eye principle)
- witness testimony like supervisor or trainer reports
- review of products of performance e.g. results of practical tests (like proficiency tests, blind test or validation studies), case files, case notes and other documentary evidence.
- oral and written examination
- role exercises, e.g. 'mock' court situations

For an individual to be assessed as competent in forensic practice the assessment of competence should be done on the basis of work done on actual casework supported by essential knowledge. When carrying out an assessment, assessors must ensure that they have sufficient, robust, current evidence that a practitioner has met the standards. It is suggested that a minimum of four case files should form the assessment material for any particular specialist area.

Part of the strategy of the CAP group is to develop examinations to test general forensic knowledge and area specific knowledge. These examinations or equivalents should be part of the knowledge assessment within an organisation.

### 3.6 Assessors

Assessments should be conducted by an assessment team. This assessment team should include a person who is normally professionally active in the discipline being assessed. The assessment team should also include a person who has not had a principal role in training of the candidate.

If the assessment is conducted by only one assessor, the mentioned principles (active in the discipline and no principal role in training) should be counted for this assessor.

### 3.7 Records and authorisation

Records of assessment of competence must be kept including sufficient detail for another assessor to be able to locate the evidence and agree it (or not). Details that must be included are: the date of the assessment, the name(s) of the assessors, the findings and the conclusions about the competence of the practitioner. Also details of all cases and tests which form part of the training or assessment process should be recorded.

A person should be recognised as competent only when he or she has been assessed or reassessed as meeting the defined standards of performance and only then be permitted/authorised to undertake casework. If any further supervision is required it should be documented and evaluated.

Candidates should acknowledge that they agree with their defined competence e.g. by signing their assessment.

Once competence has been established reflective statements and feedback forms could be used to monitor a persons performance for a short period of time. It helps identify further training needs in the area.

## 4. Using the standards

For an individual to be assessed as competent in forensic practice the assessment of competence must be on the basis of work done on actual casework against the Performance Based Standards for Forensic Practitioners detailed in QCC-CAP-003.

The standards list nine activities (designated A to I). These standards are applicable to all roles in the forensic process, whether it is scene investigator, reporting scientist, reporting analyst etc. However, not all of the activities and standards will be applicable to all roles. For example, the role of the crime scene investigator will focus around activities B to D and might include parts of activity I, whereas the role of reporting scientist will focus around activities E to I (unless the role also involves scene investigation). The role of the reporting analyst may focus around activities E, F, G and I. Therefore, for any particular role being assessed the practitioner must be assessed against the components relevant to that role.

Assessors should be able to translate generic parts of the standard to the area of specialism under assessment. For example, in their generic form the standards are applicable to all forensic disciplines, whether that is crime scene investigation, forensic pathology, DNA, criminalistics etc. For use in a specific area of forensic practice they will need some "translation" to the language and environment of the particular specialism. For example, although contamination will be understood by all forensic practitioners, the actual type of contamination may well be different from one specialism to another.

In theory, therefore, evidence must be provided that a practitioner has met each of the relevant standards – detailed as "You must ensure that you" and all of the associated knowledge and understanding – detailed as "You need to know and understand" in QCC-CAP-003. Much of the knowledge and understanding should be self–evident from the way that casework has been carried out but some may not be. Where the possession of e.g. knowledge is not obvious from case file assessment oral and written examinations or other assessments may be required (see also par. 3.5).

In terms of assessing against the standards generally, the evidence of how each particular component of the standard is met must be recorded. This will require some form of assessment record sheet(s).

One option would be to have an assessment form which lists every activity, every standard and every criterion listed as "You must ensure that you". This would result in a complete, but lengthy, assessment form.

A second option would be to have an abbreviated assessment form based around the activities and standards. An assessor, when making an assessment would use all the "You must ensure that you" criteria listed in QCC-CAP-003 but would record the evidence on the abbreviated assessment form based around the relevant activities and standards. An example of an abbreviated assessment form is shown in Appendix 3. (In this form the standards and activities are mentioned first and then the evidence. A form with the evidence in the first column and then in the second column the reference to the relevant activities and standards is also possible).

An individual meeting all of the standards relevant to his or her role would be deemed as competent in a particular area of work.

# 5 Maintenance and reassessment of competence

Individuals will be required to demonstrate that they have maintained their competence. There should be a system of ongoing assessment. A complete reassessment should be performed at least every 6 years.

Guidance should be provided on the assessment and the sources of evidence required for the ongoing assessment of competence(s) in any particular work area for each of the role types involved.

Evidence to maintain competence should reflect recent work and actual or state of the art knowledge/experience.

Examples of these sources of evidence are:

- successful involvement in a specified number of examinations of that type in the previous period of time
- documentary evidence of examinations reproduced by other 'competent' members of staff
- peer review (including re-examination of exhibits)
- performance in proficiency tests
- performance in competence tests
- assessment through internal and external audits
- feedback including customer and defence examinations
- evidence of registration by an external accreditation body on competence assessment
- review of a portfolio of actual/state of the art experience (court performance, publications, training, projects, workshops, seminars, conferences, etc.)
- validation projects

An example of a case file/statement review system (a kind of peer review) is outlined in appendix 4.

# 6 Reassessment due to change of circumstances

If an individual cannot produce records to show that he/she have actively carried out work in the relevant area within a period of time, the competency of this individual should be deemed to have lapsed.

When a competency has lapsed, before individuals can carry out casework requiring the competency, they must demonstrate that they are still competent. For this re-assessment a procedure should have been developed.

Examples of what can be done to re-establish competence are:

- competence assessment
- participation in a proficiency test
- ghosting an examination
- writing a ghost statement
- reading the validation

## Appendix 1. Examples of behaviour and attitude in the standards

The examples come from the Performance Based Standards for Forensic Science Practitioners. (QCC-CAP-003).

**Standard E2: Determine the examination strategy**

e. Communicate examination strategy to relevant personnel

i. Make effective working relationships with relevant personnel in order to co-ordinate casework

**Standard I1: Produce report**

c. Report all results accurately and clearly express the limitations of the tests used

**Standard I3: Present oral evidence to court and inquiries**

a. Perform according to acceptable professional standards for appearance and behaviour
b. Deliver your evidence in an audible and understandable manner

d. Deal with questions truthfully, impartially and flexibly in a language which is concise, unambiguous and admissible

**In different parts of the standard**:

Record relevant information accurately, comprehensively and at the time of the examination/interpretation

Behaviour and attitude is also addressed in the ENFSI code of conduct (BRD-GEN-003)

## Appendix 2. Examples of Area's of competence for reporting scientists.

Area's of competence within:

| SKL (Sweden) | FSS (England) | NFI (Netherlands) | FSL (Ireland) |
|---|---|---|---|
| DNA<br>Arson<br>Alcohol<br>Fingerprints<br>Morphology<br>Drugs and anabolic steroids<br>Chemistry (several areas)<br>Marks<br>Accelerants<br>Documents<br>Handwriting<br>Environmental and oil<br>Firearms<br>Breath alcohol<br>Drugs comparison<br>Poisoning cases | Pathology<br>Toxicology<br>DNA<br>Blood pattern analysis<br>Hairs<br>Drugs – identification<br>Drugs profiling<br>Fibres and textiles<br>Development of fingerprints<br>Comparison of fingerprints<br>Paint<br>Accelerants<br>Glass<br>Handwriting<br>Documents<br>Weapons and ammunition<br>Gunshot residues<br>Explosive residues<br>Fire and explosion investigation<br>Tool marks<br>Footwear marks<br>Vehicle component examination and accident reconstruction<br>Forensic telecoms<br>Digital imaging<br>Forensic computing | Pathology<br>Forensic medicine<br>Toxicology<br>DNA<br>Hairs<br>Environmental examinations (several different areas)<br>Drugs (4 different areas)<br>Fibres and textiles<br>Development of fingerprints<br>Paint<br>Accelerants<br>Glass<br>Handwriting<br>Documents<br>Weapons and ammunition<br>Gunshot residues<br>Tool marks<br>Road accidents<br>Speech and audio<br>Digital imaging<br>Digital systems (2 different areas)<br>Microtraces<br>Crime scene/searching and recovery | Sexual assaults<br>Identification of body fluids<br>Blood pattern analysis<br>Analysis of damage to clothing<br>Glass<br>Paint<br>Accelerants<br>Footwear prints<br>Firearm residues<br>Explosives<br>Tachograph<br>Soil<br>Inks, dyes and markers<br>Physical fits<br>DNA<br>Drugs<br>Toxicology screen<br>Alcohol<br>Fibres<br>Hair<br>Toolmarks |

Area's may change once in a while.

Examples of criteria for defining these area's:

- It should be possible to define/describe the area
- There should be clear limits between areas
- The area should have a reasonable caseload
- The area should have a reasonable variety on the content and a reasonable depth.
- There should be an intrinsic cohesion within the area.
- It should be possible for one expert to oversee the area
- The methods, materials and equipment used within the area have been demonstrated to be fit for purpose, robust and reliable in meeting the requirement
- There are appropriate quality control and quality assurance procedures within the area for monitoring performance
- The area should have a training program
- Standards of competence should be defined for the area

## Appendix 3 Abbreviated assessment form.

# COMPETENCY ASSESSMENT

**Name of Practitioner :……..** **Name of Institute……**

***Reference: ……***
***Evidence types or area of work……***

| *STANDARD* | *Standard Met Y/N* | *Give details of the evidence which supports your assessment against the criteria* |
|---|---|---|
| ***Activity A – Undertake initial actions at the scene of incident***<br><br>Control was taken of the scene so that it was protected for those individuals who would carry out a detailed investigation of the scene. | | |

| | | |
|---|---|---|
| ***Activity B – Develop a scene investigation strategy***<br><br>The requirements of the investigation and the investigators have been understood.<br><br>The scene has been assessed and the strategy necessary to meet the requirements of the investigation determined, taking account of the principles and practices involved in the investigative process. | | |
| ***Activity C – Undertake scene investigation***<br><br>Effective control and preservation of the scene established so that the scene and any potential evidence at the scene was not compromised.<br><br>Equipment to be used in the examination prepared appropriately and area for examination identified examination in order to maintain the integrity of the items and samples collected.<br><br>Items and samples recovered from the scene packed and stored appropriately | | |
| ***Activity D – Interpret scene findings and order further examination***<br><br>Initial scene examination findings analysed to determine the likely sequence of events that took place at the scene of the incident.<br>Appropriate decisions made on which items and samples recovered from the scene are to be examined further<br><br>Items and samples have been transferred to relevant locations and stored securely | | |

| | | |
|---|---|---|
| ***Activity E – Develop a laboratory examination strategy***<br><br>Requirements of the case and of the investigators (ie the questions that the customer wants answering) have been established appropriately<br><br>A suitable forensic examination strategy has been developed that meets the needs of the case and those of the investigators | | |
| ***Activity F – Prepare to carry out laboratory based examinations***<br><br>The suitability of the items submitted to address the customer's questions has been assessed and remedial action taken if necessary<br><br>The initial examination strategy has been assessed as appropriate and remedial action taken if necessary<br><br>Appropriate equipment and the area in which the examination is going to be carried out have been prepared in order to maintain the integrity of the items and samples | | |
| ***Activity G - Examine items and samples***<br><br>The correct type of examination has been selected to address the case strategy and meet the customer requirements.<br><br>The practitioner has carried out the various examinations satisfactorily and/or ensured that they have been carried out satisfactorily by others<br><br>The results of the examinations have been recorded appropriately and summarised where relevant | | |
| ***Activity H – Interpret findings***<br><br>The results have been interpreted in accordance with | | |

| | | |
|---|---|---|
| established scientific principles and the conclusions reached have been framed by consideration of at least two alternative hypotheses | | |
| ***Activity I – Report findings***<br>The report produced is based on the findings, logical, easy to read and answers the customer's questions.<br>Oral evidence has been presented satisfactorily to courts and/or inquiries | | |

**Assessor Name……Signature……..Date……...……..**

In this form the standards and activities are mentioned first and then the evidence. A form with the evidence in the first column and then in the second column the reference to the relevant activities and standards is also possible.

## Appendix 4. Example of Database for Recording Peer Review Results

Alterations following reviews of case files are assigned to one of three categories.

### Level 1

Where the change does not have a significant impact on the report or the case

Examples

Error in the **file and/or laboratory records**
Rephrasing of **text** required for clarity
**Inconsistency between file and report** such as non-reporting of a substance found that is not significant within the case context
**Unnecessary work done** such as tests that do not advance the case or too many samples tested
**Extra work** required to ensure best practice

### Level 2

Where a non-scientific change in the report could have a significant impact on the legal process

Examples

An ambiguity in the **text** causes a significant misunderstanding
A **typing error** reverses or alters a result
**Inconsistency between file and report** such as a record of a significant substance in the file but not in the report
**Continuity error**, that render significant evidence as inadmissible, such as an incorrect name, date, exhibit number or incorrect label on a significant sample
**Extra work** required to support a conclusion

Level 3

Where an incorrect scientific result produces a major change in the effect of the report.

### Examples

Significant evidence not found that should have been detected
Incorrect identification of a substance
Incorrect association of test samples with controls, e.g. fibres, shoe print, DNA,
Incorrect interpretation of significant results

Level 3 errors must be reported to the Quality Manager who takes corrective action.

The required fields to capture the information are illustrated.

Case Number Scientist

Review Scientist Date

Changes required Y/N ☐

| Level 1 | No Significant Impact | |
|---|---|---|
| Sub Categories | | Nos. |
| A | File and/or Lab Records | |
| B | Text | |
| C | Typing Error | |
| D | Inconsistency between notes & reports | |
| E | Unnecessary work done | |
| F | Extra Work Required | |

| Level 2 | Could impact on the Legal Process | |
|---|---|---|
| Sub Categories | | Nos. |
| A | Text | |
| B | Typing Error | |
| C | Inconsistency between file and report | |
| D | Continuity | |
| E | Extra Work | |

| Level 3 | Report to Quality Manager | |
|---|---|---|
| Details | | |

| General Peer Review Comments |
|---|
| |