FRAMEWORK FOR TEMPLATE FOR FIELD SPECIFIC BEST PRACTICE MANUAL (BPM)

DOCUMENT TYPE:	REF. CODE:	ISSUE NO:	ISSUE DATE:
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NOTE: **The previous template for field specific BPM was referenced QCC-TPL-003 and was last issued as issue 002 on 18.07.2018. This document has revised the content of the previous template and is referenced QCC-FWK-003 in order to conform with the correct naming nomenclature of ENFSI documents. Due to the change of references, this document is at issue 001.**

1. GENERAL REMARKS

1.1 Definition of a Best Practice Manual (BPM)[1]

A BPM is a field-specific document which describes a forensic activity (or part of it) like an examination, methodology, analysis and/or investigation in a laboratory or at a crime scene. It covers all relevant aspects of the examination like the principles of the method(s) used, instrumentation, quality assurance principles, requirements of the expert, training processes and approaches to forensic examinations.

A BPM should be written in general terms and is aimed at practitioners in the field and assumes prior knowledge in the discipline. The BPM is not meant as a standard operating procedure (SOP) in an individual laboratory.

A BPM is based on consensus amongst the relevant forensic experts and reflects the accepted practices at the time of writing. The requirements of the judicial systems are addressed in general terms only.

1.2 Document code

The BPM shall have a unique ENFSI code. The allotment of the code is the responsibility of the QCC.

1.3 Structure and layout

The BPMs should follow a uniform structure in sections, sub-sections, etc. The titles at the various levels should have a layout (letter type, capitals, size / points, bold, underlined, Italic, etc.) indicating the (sub-)level. The format of the bullet type used in the document is the authorised choice but should be consistent throughout.

- Font used: Arial
- Colour: black (except top header and footer and ENFSI logo)
- Size:

[1] The term BPM does not imply that the practices laid out in this guidance are the only good practices used in the forensic field. The term BPM has been chosen for reasons of recognition.

Cover front: 30pt, 20 pt, bold
Title (first page): 16pt, CAPITALS, bold,
Designations below title: 10pt, lower row bold
Footer: 11pt, Right corner page number
1st level paragraph: 14pt, bold, justification, single line spacing
2nd level paragraph: 12pt, underlined, justification, single line spacing
3rd level paragraph: 12pt, justification, single line spacing
4th level paragraph: 12pt, Italic, justification, single line spacing
Regular text: 11pt, justification, single line spacing

Example:

1st LEVEL PARAGRAPH

2nd Level Paragraph

3rd Level Paragraph

4th Level Paragraph

Regular Text Regular Text

Note: sub-sections without title should not be numbered!

Example of the use of a selected bullet (also present in the template -Appendix-):
- practical tests;
- written and/or oral examinations;
- role exercises, e.g. "mock" courts;
- casework conducted under the close supervision;
- a portfolio of previous work.

Page numbers are mandatory in document's footer.

1.4 Appendix

The use of appendices is encouraged if it enhances the usability of the BPM.

1.5 Check on correct English

The BPM's must be written in correct English and the text should be checked and corrected by a professional or native speaker.

1.6 Terminology

Synonyms can make a text more lively and attractive to read. However, care should be taken as this might be confusing, especially for non-native speakers.

Some observed examples:
- Hypothesis versus proposition.
- Examiner or expert or practitioner or scientist.

Please be careful in using synonyms and avoid potential misunderstandings.

1.7 Deviations from default texts

Deviations from the default texts are allowed to authoring entities (EWGs, EU project schemes etc.) based on the needs of each field-specific BPMs.

1.8 'Empty' sections

Titles of 1st level sections should be remained in the BPM for reasons of uniformity. If actual content is not in place, 'not applicable' should be stated.

2. REMARKS PER SECTION

2.1 Title

The title is a heading identifying the specific best practice manual.
Structure: Best Practice Manual for [… to be completed by the AUTHOR…] (accurate and precise)

2.2 Content

An index (table of contents) of the main headings should be listed.

If a section is not applicable for the particular BPM, the (sub-)title should not be deleted. The title should be kept to remain the same section numbers in all BPM's. In these situations, 'not applicable' should be stated in that section.

The titles of the sections as well as the (sub-)sections should be listed in the Contents page.

2.3 Aims

The objectives of the document must be clearly defined.

Aims clarify why a process has been described by writing this BPM, whilst Scope defines the beginning, the end and the contents of this process.

Default text:

This Best Practice Manual (BPM) aims to provide a framework for procedures, quality principles, training processes and approaches to the forensic examination. This BPM can be used by Member laboratories of ENFSI and other forensic science laboratories to establish and maintain working practices in the field of forensic [… to be completed by the author…] examination that will deliver reliable results, maximize the quality of the information obtained and produce robust evidence. The use of consistent methodology and the production of more comparable results will facilitate interchange of data between laboratories.

The term BPM is used to reflect the scientifically accepted practices at the time of creating. The term BPM does not imply that the practices laid out in this manual are the only good practices used in the forensic field.

2.4 Scope

This section should define the sphere of activity of the document including any limitations or assumptions. The best practice manual is an overarching document which should guide the format and structure of the detailed standard operating procedures. The best practice manual

should address the entire forensic process for the specific field of expertise, from the scene of crime to the presentation of evidence in court. It should also encompass the specific aspect related to resources, validation, methodology, quality assurance, case assessment, etc. for the whole spectrum of the forensic process. The purpose of a best practice manual is not, however, intended to instruct crime scene officers or prosecutors and should be limited to field specific guidance. It is self-evident that the content of this BPM reflects the scientifically accepted practices at the time of printing.

This BPM is aimed at experts in the field and assumes prior knowledge in the discipline. It is not a standard operating procedure and addresses the requirements of the judicial systems in general terms only.

An overarching document describes the process / work field and sits above detailed standard operating procedures, which describe a single concrete method of the process.

2.5 Terms and Definitions

Specific terms and definitions which assist in the interpretation of this manual are listed.

For the purposes of this Best Practice Manual (BPM), the relevant terms and definitions given in ENFSI documents, the ILAC G19 “Modules in Forensic science Process”, as in standards like ISO 9000, 15189, 17020, 17025, 21043 apply.

Note: General definitions related to quality are given in ISO 9000, whereas ISO 17000 gives definitions specifically related to certification and laboratory accreditation.

2.6 Resources

Only field specific quality advice relating to the best practice manual should be outlined.

2.6.1 Personnel

Specific competencies of personnel should be defined.

It is advisable to avoid referring to qualifications and diploma’s unless legally required.

If the work at the laboratory is split up in various levels e.g. expert and analyst, the abovementioned applies for each level.

2.6.2 Equipment

The basic equipment and any specific technical specifications for the field to carry out the tests/examinations (at scene and at laboratory) and specific advice regarding calibration, verification or maintenance procedures should be outlined, as appropriate.

Software is also part of this sub-section.

2.6.3 Reference materials

If applicable, detail the technical specification for reference materials (for calibration, assessment of a measurement method, or for assigning values to materials).

2.6.4 Facilities & Environmental Conditions

Any specific requirements regarding accommodation and environmental conditions should be defined in this section.

2.6.5 Risk-Based Thinking

This section should outline -when applicable- the need for formal and strategic look at the specific risks and opportunities. Aspects like; (a) the identification of risks and opportunities, (b) evaluation of the risks, (c) ranking of the risks and opportunities, (d) determination of actions to be taken and (e) implementation of monitoring and following up of risks and opportunities, are to be addressed when required.

2.6.6 Materials and Reagents

Quality or technical specification for materials and reagents.

2.7 Methods

This section should provide guidance on the systematic approaches to be followed in the field specific examinations. Existing and agreed methodologies can be referenced. However, any links used must be widely accessible.

Sum up the potential methods (including references) that are in place, but do not include parts of the mentioned SOP's. The selection of a specific method will depend on parameters relevant in the field (e.g. the nature of the surface in case of fingerprint visualisation). Describe the selection process based on these parameters.

2.8 Validation and Estimation of Uncertainty of Measurement

2.8.1 Validation

The minimum requirements for considering method validation (and where appropriate, software validation) should be outlined. Some factors to be considered include, as appropriate, sampling, precision (repeatability, reproducibility), bias (matrix/substrate effects, specificity), working range (limit of detection/sensitivity, linearity), robustness (environmental susceptibility) and competency of personnel.

Everything that will be stated on Validation must be field specific. The general aspects of validation should be done according to the ENFSI document about validation (on request this document is available at the ENFSI Secretariat).

2.8.2 Estimation of uncertainty of measurement

Where relevant, guidance should be provided on identifying and quantifying the main sources of the uncertainty of measurement.

Where necessary for the interpretation of the test results and where applicable, reports should include the measurement uncertainty presented in the same unit as that of the measurand or in a term relative to the measurand (e.g. percent) when; (a) it is relevant to the validity or application of the test results, (b) a customer's instruction so requires or (c) the measurement uncertainty affects conformity to a specification limit.

For the latter type, the recommended approach is to sum up the potential sources that may influence the uncertainty of measurement. A quantitative estimation of these sources is not required.

2.9 Quality Assurance

This section builds on the areas outlined in section 2.6 “Resources”.

2.9.1 Proficiency Testing / Collaborative Exercises

Relevant proficiency tests and collaborative exercises schemes and the frequency of participation should be listed. As the availability of PT/CE schemes is dynamic, it may be prudent to refer to a link (for example, an ENFSI website) with the up-to-date information.

Proficiency tests should be used to test and assure the quality of [… BPM specific processes]. A list of currently available PT/CE schemes as put together by the QCC is available via the ENFSI website. “Guidance on the conduct of proficiency tests and collaborative exercises within ENFSI” [1] provides information for the ENFSI Expert Working Groups (EWGs) on how to organise effective proficiency tests (PTs) and collaborative exercises (CEs) for their members.

If there are no PT’s available for a specific field, describe alternative ways.

More information is available in ENFSI’s document “Guidance – Framework on the conduct of proficiency tests and collaborative exercises within ENFSI”.

2.9.2 Quality Controls

Quality Controls used in the method and/or process should be listed here and detail any relevant criteria that should be recorded.

2.9.3 Data Collection for control, monitoring and trend analysis

Reference all data collection that should be undertaken for the purposes of assuring the method/process and outline how this could be presented i.e. control charts etc.

The responsibilities of the QA-manager in the institute should not be included in the BPM.

2.9.4 Verification / Peer Review

Reviews in the specific forensic field are strongly recommended, for example; review of critical findings (a list of critical findings requiring cross-checking by a second competent expert may be useful) and review of technical finding (checks of analytical findings, raw data used in the interpretation of findings, etc.).

The management review should not be included in the BPM.

2.10 Handling Items

This section should address specific considerations of handling items at scenes and in the laboratory as appropriate. Factors for consideration may include:

2.10.1 At the scene

- Examination of the Scene, Victims and Suspects

- Avoidance of contamination
- Search and recovery
- Sampling
- Preservation and packaging
- Labelling and documentation
- Transport

2.10.2 In the laboratory

- Anti-contamination precautions
- Search and recovery
- Sampling
- Storing conditions

2.11 Initial Assessment

Any specific advice to help with the requested examination should be included in this section. Information for consideration are references to the direction of investigation, status of the scene, suspects and victims, changes in the urgency for information, contamination issues and impact of results already reported. This is not an exhaustive list.

- Assessment at the scene
- Assessment at the laboratory

Interpretation of results should not be given in this section, but in section 2.14 “Assessment of Results and Interpretation.

2.12 Prioritisation and Sequence of Examinations

Document any guidance in establishing priorities and sequences for the examinations at the scene and at the laboratory if there is more than one item and/or evidence type involved, taking into account:

- client’s requirements,
- availability of items and amount of material,
- number, nature and sequence of examination technique,
- potential value of the information from each technique.

2.13 Reconstruction

Carrying out a forensic reconstruction is a methodology which can deliver additional value to already known investigating results of examined traces (evidence) in forensic investigations and/or can give insight on how traces are donated or created (activity orientated).

The preceding sentence can be interpreted broadly and depends on the nature of the forensic investigation carried out.

By means of a reconstruction, for example, the degree of probability of how and where an activity occurred can be strengthened or weakened. The results of a reconstruction can therefore influence the interpretation and the strength (value) of conclusions obtained from evidence.

2.13.1 Examples of reconstructions

- Performing specific actions to find out how a blood stain pattern could originate;

- Test shooting with a disputed firearm;
- Performing a crash test with known speed with a test car to determine/verify the speed at the moment of a collision based on the damage image;
- Reconstruction of textile damages;
- Manipulating a photograph by a forensic investigator for learning to recognize the same physical structures that may or may not be visible on a disputed (manipulated or not) photograph.

2.13.2 Approach of a reconstruction

The details and information to be recorded can include: the relevant investigators, the detailed set-up of the reconstruction, technical aspects, record of all matters which may have an influence on the results, such as photograph, video, etc. A well-documented reconstruction allows a review afterwards.

2.14 Assessment of Results and Interpretation

Guidance should be provided on the assessment of results and where an interpretation related to legal boundary values is needed or the analytical result is part of an evaluative process. More information on interpretation of results under evaluative reporting can be found in “ENFSI Guideline for Evaluative Reporting in Forensic Science”.

2.15 Presentation of Results

Any resulting limitations on the interpretation[s] of an examination shall be described in the report.

Results can be presented to the court either orally or in writing. Presentation of results should clearly state the results of any evaluation and interpretation of the examination.

Written / oral reports should include all the relevant information in a clear, concise, structured and unambiguous manner as required by the relevant legal process. It is strongly recommended for written reports to be peer reviewed prior to its presentation.

Expert witnesses should resist responding to questions that take them outside their field of expertise unless specifically directed by the court, and even then, a declaration as to the limitations of their expertise should be made.

This section should include field specific elements as well as any ISO standard followed relevant parts.

2.16 Health and Safety

This section should address health and safety issues specific to the field.

2.17 References

Every reference must be recorded providing sufficient information for the reader to facilitate its location. References can include ASTM standards, ISO documents, textbooks and scientific journals.

The reference section must be arranged in order of appearance of the references in the BPM. Each reference in the BPM should be identified with a number in brackets after the relevant

section e.g. [1]. All references should be uniform, complete and accurate. References in the BPM should be structured similar to these typical examples:

Organization as Author (example):

- EN ISO/IEC 17020:2005, General requirements for the competence of testing and calibration laboratories, section 4.4.2
- ILAC-G19:08/2014, Modules in a Forensic Process, section 4.2.3
- QCC-BT-001, Guidance on the conduct of proficiency tests and collaborative exercises within ENFSI, version 001, 27/06/2014

Journal:
Seki, H. and A. Suzuki. 1997. A new method for the removal of toxic metal ions from acid-sensitive biomaterial. J. Coll. Interf. Sci. 190: 206–211.

Book:
Martens, H. and T. Naes. 1991. Multivariate Calibration. Chichester, UK: J. Wiley & Sons.

Contribution to a Book:
Chianelli R. R., M. Daage, and M. J. Ledoux. 1994. Fundamental studies of transition-metal sulfide catalytic materials. In Advances in Catalysis, Vol. 40, eds. D. D. Eley, H. Pines, and W. O. Haag. Burlington, MA.: Academic Press.

Website:
Evanston Public Library Board of Trustees. “Evanston Public Library Strategic Plan, 2000–2010: A Decade of Outreach.” Evanston Public Library. http://www.epl.org/library/strategic-plan-00.html (accessed June 1, 2005).

2.18 Amendments to Previous Version

List the amendments in a transparent way.

If the BPM is not an update of an existing BPM, but the first version, ‘Not applicable (first version)’ is to be written here.

3. AMENDMENTS TO PREVIOUS VERSION

- DOCUMENT TYPE changed from TEMPLATE to GUIDANCE, REF. CODE changed from QCC-BPM-003 to QCC-FWK-003 and ISSUE NUMBER changed from 002 to 001.
- Changes in structure and layout were implemented in order to follow a uniform structure in sections, sub-sections, etc. The sentence “Page numbers are mandatory in document’s footer” is added.
- A clear overview of the template is provided as Appendix.
- The word “professional” is added in section “CHECK ON CORRECT ENGLISH”.
- The word “expert” is added in section “TERMINOLOGY”.
- Section “DEVIATIONS FROM DEFAULT TEXTS” is revised to become more flexible for authoring entities.
- In section “CONTENT” word “advisable” is changed to “strongly advised”.
- In the last paragraph of section “AIMS”, the last sentence “In this series of ENFSI Practice Manuals the term BPM has been maintained for reasons of continuity and recognition” is deleted.
- In section “SCOPE” the word “evidence” is replaced with the phrase “for the specific field of expertise”.
- In section “TERMS AMD DEFINITIONS” ISO standards 15189 and 21043 are added.

- In sub-section “PERSONNEL” the paragraph “Structure: Experts should be able to do: … summing up of the needed competences …” is deleted.
- In section “METHODS” the word “including” is added in parenthesis.
- In section “METHODS” the sub-section “PEER REVIEW” is changed to “VERIFICATION / PEER REVIEW and moved to section “QUALITY ASSURANCE” as a new sub-section.
- In sub-section “PEER REVIEW” the phrase “This section should include the requirements for reviews in the specific forensic field...” is changed to “Reviews in the specific forensic field are strongly recommended...”.
- In sub section “PROFICIENCY TESTING / COLLABORATIVE EXERCISES” phrase “...at the ENFSI secretariat and...” and sentence “Refer to existing PT’s on websites of providers, the list published by the QCC, etc.“ are deleted. Last paragraph of the same sub-section is also reviewed.
- Section “RECONSTRUCTION” is revised to become clearer for authoring entities. Sub-sections “EXAMPLES OF RECONSTRUCTIONS” and “APPROACH OF A RECONSTRUCTION” are added.
- Sub-section “Approach of a reconstruction” is reviewed by native speaker.
- Section title “ACCOMMODATION AND ENVIRONMENTAL CONDITIONS” is changed to “FACILITIES & ENVIRONMENTAL CONDITIONS”.
- New sub-section “RISK-BASED THINKING” is introduced in section “RESOURCES”.
- Sub-section “ESTIMATION OF UNCERTAINTY OF MEASUREMENT” is revised.
- Section title “EVALUATION AND INTERPRETATION” is changed to “ASSESSMENT OF RESULTS AND INTERPRETATION” and revised.
- Section title “PRESENTATION OF EVIDENCE” is changed to “PRESENTATION OF RESULTS” and revised.

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