



**UNODC**

United Nations Office on Drugs and Crime



**POLICING**

# **Forensic services and infrastructure**

Criminal justice  
assessment  
toolkit



UNITED NATIONS OFFICE ON DRUGS AND CRIME  
Vienna

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## **Forensic services and infrastructure**

CRIMINAL JUSTICE ASSESSMENT TOOLKIT



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This publication has not been formally edited.

## PREFACE

The Criminal Justice Assessment Toolkit (CJAT) is a standardized and cross-referenced set of tools designed to enable United Nations agencies, government officials engaged in criminal justice reform, as well as other organizations and individuals to conduct comprehensive assessment of criminal justice systems; to identify areas of technical assistance; to assist agencies in the design of interventions that integrate United Nations' standards and norms on crime prevention and criminal justice; and to assist in training on these issues.

The Tools have been grouped within criminal justice system sectors: Policing, Access to Justice, Custodial and Non-Custodial measures, and Cross-Cutting Issues. Designed to be a dynamic set of documents that continue to meet assessment needs as they evolve, additional Tools will be developed and incorporated in the electronic version of the CJAT.

The present Tool provides guidance to assess forensic services and infrastructure, including crime scene investigations as well as forensic laboratory<sup>1</sup> operations, and is included under the policing sector.

The Tool has been designed to allow the assessor to assess the spectrum of forensic services and infrastructure, from countries with the most rudimentary of institutions and processes to those with a quite complex forensic infrastructure. It provides a practical and detailed guide to the key issues to be examined. The level of detail in the Tool is deliberate, allowing assessors to gain an understanding of the depth and complexity that a thorough assessment should involve. The Tool is not a checklist. An artificially simplified approach to conducting the assessment would be a disservice to the assessor relying upon the toolkit as well as the agencies, nations, and ultimately, the people at risk, who will depend on the quality of the assessments guided by the Tool.

The CJAT has been designed to assist both experts, who may want to use the Toolkit as an aide-mémoire for their specific area of expertise, and assessors who may be conducting assessments in areas related to, but distinct from, their expertise in criminal justice. The Toolkit is not designed to act as a substitute for expertise, experience, and judgment. Rather, the Tools are intended to help inform and frame the assessor's thinking and line of inquiry; the detailed sets of questions should function to provoke thought about and to provide insight into an aspect of the criminal justice system, e.g., forensics.

CJAT is designed for use both in countries that have common law or civil law or hybrid criminal justice systems and assessors should find it particularly useful for countries undergoing transition or reconstruction.

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<sup>1</sup>The term forensic laboratory is used throughout this document as a synonym for forensic institute. While the tool can be easily adapted to forensic medicine or pathology specifically, and while they have been included, it is not primarily aimed at dealing comprehensively with clinical forensic medicine or forensic pathology.

## USING THE TOOL

The Tool to assess forensic services and infrastructure is available both as part of the CJAT and as a stand-alone module. To facilitate its use as a stand-alone module, portions of the General Introduction to the CJAT have been included in the Preface of this Tool, and annex A.1 reproduces general guidelines for conducting assessments.

Assessors of forensic services and infrastructure are encouraged to make full use of the available general resources of the CJAT, which can be accessed at the following website address: [www.unodc.org](http://www.unodc.org).<sup>2</sup>

The present Tool on forensic services and infrastructure is complemented by additional annexes specific to assessing forensic services and infrastructure. They include a glossary defining commonly used terms (highlighted in **bold** throughout this document); a flow chart illustrating the role of forensic services in the criminal justice process; a table outlining techniques routinely used in the different forensic science disciplines; and an overview of forensic science associations and networks.

Because of significant cross references throughout the document, it is recommended to read it in its entirety and not just those sections that appear relevant to the assessor in a given situation.

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<sup>2</sup>The specific link as at November 2009 is: [www.unodc.org/unodc/en/justice-and-prison-reform/Criminal-Justice-Toolkit.html](http://www.unodc.org/unodc/en/justice-and-prison-reform/Criminal-Justice-Toolkit.html)

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# Contents

	<i>Page</i>
Preface . . . . .	iii
Acknowledgements . . . . .	v
1. Introduction . . . . .	1
2. Overview/contextual information . . . . .	5
2.1 Crime situation . . . . .	5
2.2 Forensic infrastructure . . . . .	6
3. Legal framework . . . . .	9
4. Crime scene investigation . . . . .	13
4.1 First responders . . . . .	14
4.2 Crime scene investigation (CSI) services . . . . .	14
4.3 CSI facilities and equipment . . . . .	15
4.4 CSI staff selection and training . . . . .	16
5. Forensic analyses and examinations in a laboratory or medical facility . . . . .	17
5.1 General laboratory information . . . . .	17
5.2 Scope of services . . . . .	18
5.3 Customers . . . . .	18
5.4 Laboratory staff selection and training . . . . .	19
5.5 Facilities and sample handling . . . . .	21
5.6 Laboratory equipment, procedures and materials . . . . .	23
5.7 Reporting . . . . .	26
5.8 Databases . . . . .	27
5.9 Quality assurance . . . . .	28
5.10 Caseload . . . . .	30
5.11 Management and planning . . . . .	31
6. Using forensic data and information . . . . .	33
7. Partnerships and coordination . . . . .	35
7.1 The criminal justice system . . . . .	35
7.2 The scientific community . . . . .	36
7.3 Donor coordination . . . . .	37

	<i>Page</i>
Annex A. Assessor's guide: general guidelines, tools and checklists . . . . .	39
Annex B. Glossary . . . . .	53
Annex C. Flow chart: decision points in the criminal justice process . . . . .	56
Annex D. Routinely used forensic techniques . . . . .	58
Annex E. Overview of forensic associations and international players. . . . .	63



# 1. Introduction

Forensic services are key to an effective and fair criminal justice system because they provide objective and timely information for multiple phases at different stages of the criminal justice process. For example, forensic services are used by police to identify suspects in the investigative phase of the criminal justice process. Forensic services are also used by attorneys and judges during the trial phase of the process. The ultimate objective of forensic science is to contribute to finding the truth, more precisely to provide the criminal justice system with answers, using objective evidence, and by questions aimed at determining the guilt or innocence of an offender. It is therefore essential that forensic services are provided by a highly qualified and impartial entity.<sup>3</sup>

Defining just what is meant by the term “forensic science” is difficult. Almost any science can be called a forensic science when used in a legal context (e.g., by police investigating a crime or by the courts during trials). This overly broad definition of forensic science is not particularly useful when attempting an assessment of forensic services. On the other hand, limiting the scope of forensic science to only analyses performed in a laboratory results in an overly narrow definition and therefore assessment of part of the infrastructure providing forensic services. In this document, forensic services and infrastructure go from the recognition, collection and examination of physical evidence from crime scenes, through the analysis and interpretation of evidence in a forensic laboratory, to the presentation of findings in court.

The provision of forensic services depends on the national legal systems and therefore the mandate and structure of forensic service providers are influenced by the political views and traditions in individual countries. There is no single model for the provision of forensic services.

Forensic services are mostly provided by laboratories. These are often part of the public sector, i.e. can be classified as governmental institutes, typically under ministries of interior or justice, but they may also be affiliated to ministries of health

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<sup>3</sup> While forensic science laboratories are often part of the law enforcement system and therefore most often not independent, the professionalism and responsibility of their staff ensures the provision of impartial opinions and reports.

(e.g., for toxicology or clinical analyses), or they may be part of government analyst services. In addition, certain forensic services are typically provided by other service providers: expertise in police facilities may be used to process crime scenes and perform (basic) forensic examinations (e.g., fingerprints), and universities may provide non-routine forensic services (e.g., archeology or entomology). Finally, private laboratories and independent experts may also provide forensic services, usually on a commercial basis.

In terms of infrastructure, there may be a single forensic laboratory, or multiple forensic laboratories, e.g., a central laboratory at federal or state level, complemented by subsidiary laboratories at state, provincial, regional or local level. In some countries, different law enforcement agencies have their own laboratories (e.g., police, gendarmerie and customs). Forensic medical services may be provided by a separate facility, or they can be part of the forensic laboratory. Specific narcotics laboratories may also exist as part of a national counternarcotics enforcement infrastructure. Document examination capacity is likely to exist in departments of immigration.

Most forensic laboratories perform a wide range of analyses on multiple evidence types (e.g., drugs, blood, firearms, etc.). The different evidence types, also called disciplines, may have different names and the analyses performed in the laboratory assessed may be grouped in different ways. This can be very confusing for an assessor. For example, in one laboratory, the term “drug analyses” may refer to the analysis of street drugs (solid dosage forms). In another laboratory, the same term (drug analysis) may be used to describe the analysis of drugs in biological fluids like blood or urine. Another laboratory may refer to the analysis of drugs in biological fluids as “toxicology”.

Not all forensic laboratories conduct the same types of analyses. Multi-disciplinary laboratories, even those referred to as “full service” laboratories, may not conduct all possible types of analyses in-house. When the laboratory has a need for additional testing capabilities, it may have a cooperative agreement with another laboratory (even one within another country) to provide assistance. A forensic laboratory may also collaborate with a university or a private laboratory for additional expertise. The scope of some laboratories is very narrow; i.e., they specialize on a single type of analysis (e.g., explosives, drugs, DNA).


Assessing forensic services from the crime scene to the courtroom is complex and should include legal, structural (e.g., affiliations), non-technical (e.g., reporting results, court presentations, laboratory management, planning, ethics and oversight, etc.) as well as technical aspects (i.e., examinations and analyses). The quality of the technical work performed at an individual forensic laboratory may not be uniform and can vary between disciplines. Additionally, although adequate equipment and instrumentation are necessary for a laboratory to provide good services, the equipment and instruments available in a laboratory are not, of themselves, a reflection of the quality of the services provided. An assessment also reviews how a laboratory maintains its equipment and is keeping up with new technology as well as the opportunities that exist to establish and maintain scientific expertise for forensic scientists. These

support functions (e.g., research and development, method validation, education and training) may be provided in-house or through collaboration with universities or other forensic laboratories. An assessment of the quality of forensic services also includes an assessment of crime scene investigation services: the expertise and capacity of first responders to take appropriate action, the review of procedures used to document, collect and preserve integrity and identity of evidence, and the communication channels and collaboration between the crime scene investigation service and the forensic laboratory.

In addition to developing an understanding of the strengths and weaknesses of a country's approach to forensic services, the assessor should be able to identify opportunities for reform and development. Technical assistance in the area of forensic science in the context of a broader strategic framework may include work that will enhance the following:

- Capacity of first responders at crime scenes to take appropriate action;
- Availability of dedicated crime scene investigation services;
- Procedures to ensure integrity and identity of evidence throughout the forensic process;
- Scope of forensic services provided by forensic laboratories;
- Quality level of forensic services and work towards accreditation;
- Availability of adequate, fit-for-purpose laboratory equipment, reference collections and databases, and commitment and resources for their maintenance;
- Education and training opportunities for scientists, police officers and other criminal justice practitioners;
- Capacity to generate strategic forensic information (“forensic intelligence”);
- Integration of forensic services into national drug control and crime prevention governance frameworks;
- Regional cooperation and synergies; and
- The overall governance structure of forensic science services in the country.





## 2. Overview/ contextual information

This section is anticipated to guide the assessor to get an initial overview of the crime situation at the national level and the existing forensic response to it, including an overview of the available forensic science services providers (i.e. the forensic infrastructure). The contextual information obtained will guide the assessor in the more specific assessments of individual institutions and entities involved, affected by or impacting on in the forensic process.

### 2.1 Crime situation

*Section objective: to guide the assessor in obtaining an overview of crimes in the country to be assessed.*

Gathering information to characterize the crime problem within a country is necessary because the need for forensic services is determined by the type and frequency of the committed crimes. The review of reports on crime patterns, trends and major threats developed by national and international bodies can provide relevant information. National statistics summarizing the annual number of crimes (e.g., homicides, rapes, stolen cars, burglaries, etc.) may be available. There may also be annual reports from police, prosecutors and/or the courts that provide statistics on the crimes being investigated and prosecuted. Statistics are also available from forensic institutes. However, they are typically **caseload** statistics and not a reflection of national crime trends. Nevertheless, they are useful indicators of priorities in terms of types of **examinations** requested. All statistics provided should, where possible, be validated against statistics from other sources.

#### Sample questions: crime situation

- What is considered the most significant national crime problem? What study supports this statement?
- What are the priorities for the government to fight crime? Are forensic services on the policy agenda at the government level? Is there any priority given to ensure that crime is “forensically” investigated?

- If forensic services are available, are they used in all types of cases? In what types of criminal cases are forensics services used? Are they only used in major cases or cases involving specific persons? Are there statistics on how often crime scenes are visited once reported to the authorities?
- Are reports on crime patterns, trends and threats available? Are statistics compiled on crimes committed in the country concerned? Are annual reports available from courts, offices of public prosecutors and police forces that provide figures on criminal activity?

## 2.2 Forensic infrastructure

*Section objectives: to guide the assessor in obtaining an overview of the forensic infrastructure in place in a country or region.*

This section will also assist the assessor in identifying relevant service providers for on-site assessments outlined in later sections of this Tool [see chapter 4: *Crime scene investigation* and chapter 5: *Forensic analyses and examinations in a laboratory or medical facility*]. To facilitate the work and as far as possible, names and affiliations for each **crime scene investigation services**, each forensic laboratory, and each entity available to conduct forensic **examinations** and **analyses** should be obtained. This also includes hospitals and medical facilities that can or do perform autopsies or post-mortem examinations to assist the medico-legal (or forensic) investigation of death. Such assistance will include: provision of the cause of death; a contribution where possible to the understanding of the circumstances surrounding the death; recording the post-mortem findings in such a way that another person at another time can come to his or her own conclusions about the death, including use of photography.

As there may be significant differences in infrastructure between the capital city and other regions of the assessed country, it is also advisable to obtain information on the ease of transportation and communication.

The forensic process begins at the **crime scene** and ends in the courtroom. When a crime is discovered and reported, police officers are one of the **first responders** to attend the scene. Their initial responsibilities are to preserve the integrity of the scene and the evidence to ensure that **no contamination** or destruction occurs. First responders are also responsible for the early documentation (i.e. keep a log of activities at the scene). Once the scene is secured, **physical evidence** must be recognized, protected and collected. Usually, the recognition and collection of physical evidence is performed by trained crime scene investigators or sometimes by forensic laboratory personnel. The samples of collected evidence are then transported either to police facilities or forensic laboratories for further analyses and examinations. As an aid to the assessor, the forensic investigation process and the roles of different participants within the process are schematically described in the attached flowchart (Annex C: Decision points in the Criminal Justice Process).

*[Additional information on assessing crime scene investigation services and forensic laboratories and medical facilities is found in chapter 4 and 5, respectively].*

### Sample questions: forensic infrastructure

- Are forensic services available to investigative agencies? How many **forensic service providers** exist? Are there clear responsibilities established between the various forensic service providers?
- Do investigative agencies understand how to take a forensic approach to their work? Do investigative agencies understand how to use what forensic services they have? At a policy level, is there a proper understanding of the contribution that can be made by a forensic scientific approach being adopted from the crime scene to the court room? *[A more detailed assessment is found in chapter 7 “Partnerships and coordination”.]*
- What are the responsibilities of the first responders when arriving at a crime scene? Are they expected to protect and preserve crime scene and physical evidence? Keep a log? Are they expected to go beyond those activities?
- Are dedicated crime scene investigation services available in the country? Are they attending all crime scenes? Under which circumstances are those services deployed? Are they deployed in all parts of the country? Who decides on the deployment?
- Is there ease of transportation between major metropolitan areas? Between metropolitan and rural areas? Are there reliable mail and/or courier services?
- Are crime scene investigation services part of the police (i.e., special unit responsible for technical activities)? Are they part of a forensic laboratory? Are they part of a broader forensic institution?
- Are forensic laboratory(ies) available? Are forensic laboratory services accessible to any investigator at the local level? Under what agency(ies) are forensic services provided? Is there a single laboratory or is it part of a national system of laboratories? Are there provincial, regional or satellite laboratories under a central laboratory in the national infrastructure? Are other individuals or entities such as private experts, private or non-governmental laboratories, or universities involved in forensic **casework**?
- What key forensic services are available in the country? Are the following analyses/examinations available at country-level: drug samples? fingerprints? biological material (for instance DNA analysis)? questioned documents? identity and official documents? firearms, ammunition components and toolmarks? fire debris and explosives? fibres? hairs? paints? glass? electronic devices? audio and video recordings? Others (including non-traditional forensic services, such as forensic accounting)? *[The assessment in this section aims at obtaining an overview of the situation in the country; guidance for a more detailed assessment of the services of individual laboratories is found in chapter 5, section 2 “Scope of Services”.]*
- For services not available in the country, can assistance be obtained from abroad? Are services offered at the regional level? Which? By whom?

- Are forensic medical experts/forensic medical disciplines (e.g., pathology, odontology, anthropology) available? Have they got recognizable forensic medical qualifications, or are they hospital doctors or general practitioners simply doing the forensic work? Are they considered part of the forensic laboratory or are they included in a separate management structure?
- Once forensic examinations and analyses are performed, are reports/results provided? To whom are routinely provided the reports/results (e.g., police, crime investigator, prosecutor, judge, suspect, defence lawyer, victim, and/or other)? Are the reports/results provided to these individuals simultaneously or at different times? What is the general procedure for issuing results/reports?
- Do forensic **databases** exist? Is there a database on fingerprints? On DNA? On firearms? Others? *[A more detailed assessment of databases is found in chapter 5, section 8 “Databases”.]*
- What are the major challenges or problems for the delivery of forensic services in the current system?



## 3. Legal framework

*Section objective: to guide the assessor in reviewing the legal framework related to the use of physical evidence and forensic services in criminal investigations and proceedings, to include identifying any relevant laws, rules and regulations, as well as applicable code(s) of professional conduct.*

The legal framework in place affects many aspects of the provision of forensic services. It relates to issues such as how to obtain authority to enter the suspected **crime scenes**, to conduct the investigation, to handle evidence (e.g., the type of sealing procedures required), to submit **physical evidence** to a forensic laboratory, to analyse physical evidence and how to dispose of evidence, including the pre-trial destruction, for example, of illicit drug seizures. It typically includes provisions to establish or authorize a forensic laboratory and may specify the governmental agency which operates the forensic laboratory as well as where (geographically) the laboratory is located. It may also govern how forensic evidence is used in criminal proceedings. Forensic **databases** (e.g., fingerprint and DNA) are governed by the legal framework which may regulate data use, maintenance and removal.

Regardless of the local laws, rules and regulations, codes of professional conduct outline ethical obligations of personnel working at crime scenes and in a forensic laboratory.

It is of utmost importance for the assessor to identify and obtain copies of existing applicable laws, rules and regulations and assess their suitability to enable the forensic process in the country. If adequate laws, rules and regulations to enable the forensic process do not exist or if existing ones are limiting the forensic process, the enactment of new legislation or the adaptation of the existing one may be necessary.

### Sample questions: legal framework

- What is the legal system based on? Is there a different legal system (e.g., tribal law) that operates in rural areas?
- Does the legal framework include any provision on the use of physical evidence and forensic services? Does the legal framework regulate:
  - The work at the crime scene/crime scene investigation
  - The proper handling of evidence gathered, and regulations providing for the proper **chain of custody** of such evidence

- The establishment, functioning and funding of forensic services
  - The use and admissibility of physical evidence in court proceedings
  - Forensic databases
- Are responsibilities of all persons involved in forensic services from the crime scene to the laboratory defined in the national legal framework? What provisions govern the different types of personnel and in which way?
  - Does the legal framework govern the use of physical evidence by **forensic service providers** (e.g., crime scene investigators, laboratory analysts)? Obtain copies of laws, regulations, etc.
  - What do provisions on evidence handling govern? Do they cover evidence integrity (**chain of custody**), evidence storage, evidence security, and disposal of evidence? Are there laws or regulations on evidence transfers from the crime scene to the laboratory?
  - Is there a code of conduct for crime scene investigators and forensic experts in the legal framework? What does it govern?
  - How detailed is the legal framework governing laboratory services? Are specific services (e.g., DNA, fingerprints, toxicology, firearms, etc.) required to be established? Does the legal framework define techniques and methods to be used in forensic **analyses** and **examinations**? Are there requirements in the national legal framework for the quantification of drugs? If yes, what is required to initiate court proceedings?
  - Does the legal framework define the way the forensic personnel report their findings? Do the law enforcement authorities, prosecutors or courts have specific legal/technical requirements concerning forensic reports?
  - Are external assessments of the performance of forensic services required by the national legal framework? Are there any other measures required to demonstrate the quality of forensic services, such as the internal/systematic assessment of individual scientists? Are there requirements for laboratory **accreditation**? Are there requirements for a forensic scientist to be certified or registered at the national level? If yes, what are the criteria for **certification** or registration? *[The assessment in this section aims at obtaining information on the legal requirements related to **quality assurance** and the **chain of custody** in the country; guidance to assess the scope of quality assurance measures in individual laboratories is found in chapter 5, section 9 “Quality assurance”.]*
  - Does the legal framework limit in any manner the admissibility of forensic evidence in criminal proceedings? Does the legal framework include provisions concerning the **competence** of experts? What are the requirements set for forensic experts to be accepted as an expert witness in court? Are these requirements specified in the legal framework? Are there differences between the acceptability of forensic evidence depending on the expert witness or forensic laboratory? If so, what factors determine this? Are these factors specified in the legal framework?

- Are there any requirements in the legal framework to ensure attorneys (defence, prosecutors) and judges understand the weight of forensic evidence, like evidence and sentencing guidelines? Is training available? Do any of the law faculties have forensic science/medicine as a subject in their undergraduate law courses?
- Does the legal framework include specific elements for databases containing personal information? DNA? Fingerprints? Does the legal framework contain elements for the exchange of information from databases at the international level? *[The assessment in this section aims at obtaining information on the legal requirements related to databases in the country; guidance to assess the availability and use of databases is found in chapter 5, section 8 “Databases”.]*
- Is there any current or planned review of the legal framework? *[See also chapter 7, section 3 “Donor coordination”]*





## 4. Crime scene investigation

*Section objective: to guide the assessor in obtaining an overview of technical and scientific capacities and practices at crime scenes, focusing on personnel's education and skills, equipment, procedures and management issues.*

**Crime scene** is the starting point of the forensic process. **Crime scene investigation** is a process that aims at recording the scene as it is first encountered and recognizing and collecting all **physical evidence** potentially relevant to the solution of the case.

Initial responsibilities lie with **first responder(s)**, often police officers. They include the preservation of the scene and the integrity of the evidence, as well as early documentation of the crime scene, its evidence and all activities at the scene (i.e. keeping a log). Crime scene investigators who have received comprehensive forensic training usually quickly take over the work at the scene.

Under ideal circumstances, a close relationship is established between the forensic science laboratory and crime scene investigators to ensure that the best samples are identified, collected and submitted to the laboratory. It might also happen for laboratory personnel to be called to crime scenes.

The equipment necessary to process a crime scene and a mechanism to secure and transport the evidence to either the laboratory or police facilities, should be available to the personnel processing crime scenes. For certain types of crimes, the crime scene investigator may use specifically designed **crime scene investigation kits** (e.g., kits for drugs and precursors, sexual assault kit, gun shot residues collection kit) for the collection of the evidence.

*[Additional information on the various steps of the crime scene investigation process and why they are important is found in the UNODC manual "Crime scene and physical evidence awareness for non-forensic personnel" (ST/NAR/39; available on-line at [www.unodc.org](http://www.unodc.org)).]*

## 4.1 First responders

### Sample questions: first responders

- Following a report of crime, who decides whether and who to initially attend the scene of the alleged crime? What criteria does he or she apply? Who is called first when a potential crime is discovered? On average, how long after a crime report is the crime scene attended by a police officer? On average, how long after a crime report is the crime scene attended by an investigator?
- What is the extent of the responsibility of the first police officer/first responder at the scene? Is the first responder expected to protect and preserve the crime scene and physical evidence? Keep a log? Are first responders expected to go beyond those of the initial tasks of preserving and documenting? If so, in what types of cases and situations can this happen? What types of evidence does the first responder collect in these cases and situations?
- Is there specific training for police officers in general crime scene and physical evidence awareness and potential **contamination** issues? Training in initial actions at the scene/crime scene preservation for first responders? Is this training part of the training curriculum for all police officers, i.e. part of the police academy curriculum? How long does the training last? Does it include practical parts?
- Are police officers/first responders trained on what to look for and how to protect evidence/implement anti-contamination measures in cases they sometimes have to do so? Do they know/are they trained on how to package, seal, preserve, label, record and store evidence and samples?
- What type of material, such as barrier tape, gloves, is available to police officers?

## 4.2 Crime scene investigation (CSI) services

### Sample questions: CSI services

- Are dedicated crime scene investigation services available in the country? Are CSI services a special police unit (i.e., special unit responsible for technical activities), part of a forensic laboratory, or are they part of a different organization (not police or laboratory)?
- What is the total number of CSI services in the country? Where are each of the CSI services located? What is the funding system for the CSI services? Do the CSI services have separate budgets? How large is the budget for a typical CSI unit?
- Are crime scenes routinely processed, meaning a full crime scene investigation is done? If not all crime scenes are routinely processed, what types of crime scenes are processed?

- How many total crime scene investigations are performed per year in the country? If there are multiple CSI services, how many crime scene investigations are performed by each CSI unit per year? If there are multiple crime scene investigators, how many crime scene investigations are performed by each crime scene investigator per year?
- How is the work performed and managed at the scene? What are the procedures in place? How is the crime scene preserved/protected? How are the scene, physical evidence and activities at the scene documented? Which means are used: are photographs and/or videos taken? Do standard operating procedures (SOPs) exist for preservation, collection, labelling, packaging and storage of evidence? What kind of processes and practices are in place to avoid contamination at the scene? To avoid contamination between samples?
- Are there **quality assurance** procedures implemented for crime scene investigations?
- How are responsibilities divided among law enforcement officers (i.e., first responders and police investigators/detectives), crime scene investigators, laboratory personnel/forensic experts, and prosecutors? When are facts and findings from the crime scene investigation communicated to the police investigator responsible for the investigation? Do police investigators/detective and prosecutors understand the potential and limitations of forensic evidence and crime scene investigation?
- How is work between crime scene investigators and forensic laboratories coordinated? Are forensic experts from a laboratory involved in crime scene investigations? If so, in what types of cases?
- Are there (or have there been) internationally funded initiatives aimed at developing CSI services? [*Specific guidance for donor coordination is found in chapter 7, section 3 “Donor coordination”.*]

### 4.3 CSI facilities and equipment

#### Sample questions: CSI facilities and equipment

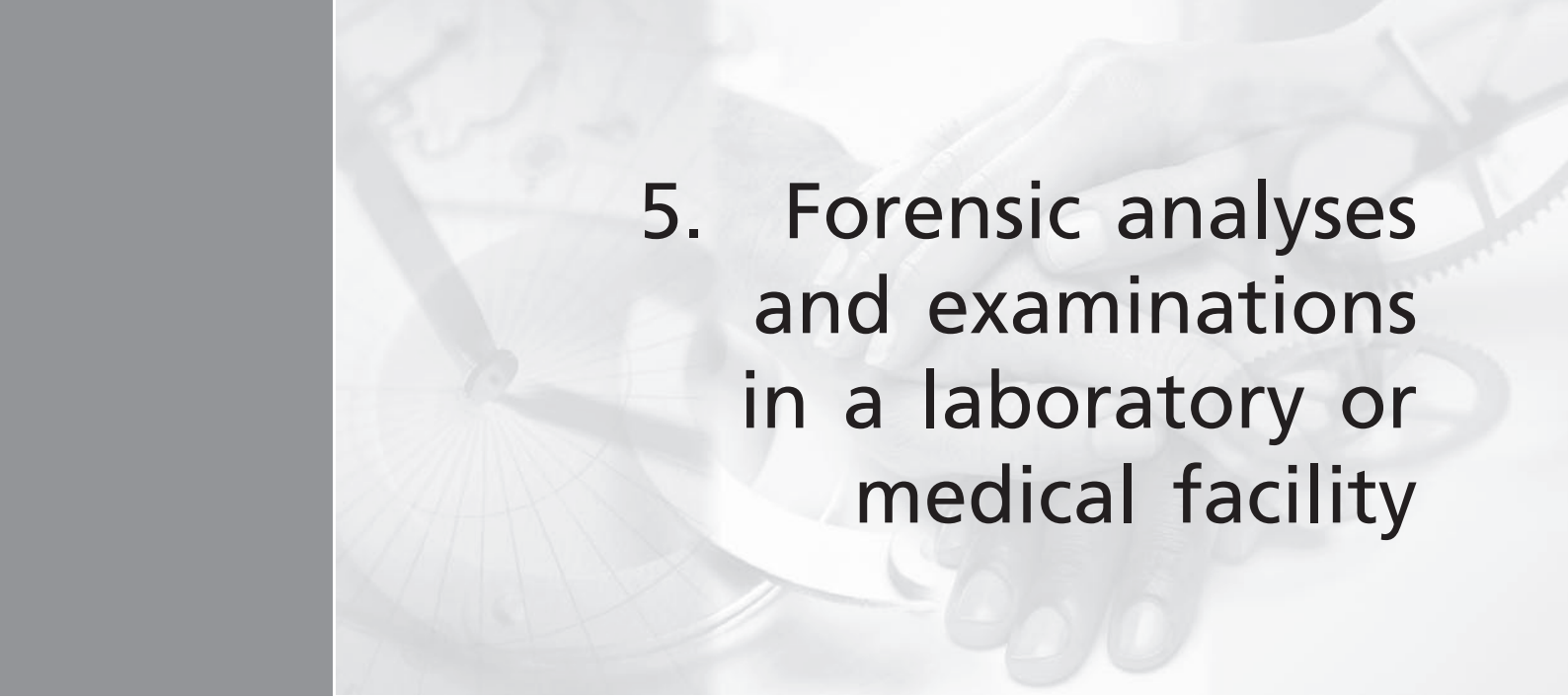
- What types of facilities are available to crime scene investigators? Do CSI services have dedicated facilities to examine evidence collected from crime scenes? What **examinations** are performed in these facilities: colour tests for drugs? Fingerprints detection and enhancement? Basic examinations of questioned documents? Comparison of ammunition? Others? Which?
- Do CSI services have dedicated cars and regular access to fuel for their own use? Are cars specially equipped for crime scene investigations with crime scene investigation equipment and material? Are mobile laboratories available? What equipment is included in those mobile laboratories?

- What type of equipment and material are available to crime scene investigators to process crime scenes? Are equipment and material for protection and safety, for detection, for collection, for packaging and for documentation available? Do crime scene investigators have access to casting techniques for 3D marks, to serial number restoration techniques, material for detection and enhancement of fingerprints and material for ink exemplars? *[Additional guidance on equipment and material for crime scene investigation is found in UNODC manual “Staff Skill Requirements and Equipment Recommendations for Forensic Science Laboratories”, available on-line at [www.unodc.org](http://www.unodc.org).]*
- Are equipment and material for crime scene investigation made available in a standardized manner, i.e., in the form of crime scene investigation kits or suitcases containing all necessary equipment and material? Are those kits made available using national/local resources? Or are they provided through bilateral assistance? Are specialized kits available: sexual assault kits? Gunshot residue **field detection test kits**? Drug and precursor field detection test kits? Are specialized kits available from commercial sources? Or are they developed locally? In the forensic laboratory?
- Are CSI services equipped with IT equipment? Do CSI services perform analyses in the field with portable (analytical) equipment? What types of crimes are processed using portable equipment? What type(s) of portable equipment are available, e.g., are portable ion-scan spectrometry, portable Fourier transform infrared or portable Raman spectroscopy available?
- Is there any current or planned external assistance to upgrade CSI capacity? *[See chapter 7, section 3 “Donor Coordination”.]*

## 4.4 CSI staff selection and training

### Sample questions: CSI staff selection and training

- If there are dedicated crime scene investigation services, how are crime scene investigators recruited? What are the requirements for the position? Are crime scene investigators required to be law enforcement officers or can non-law enforcement personnel serve as crime scene investigators? What type of experience is required? Is a scientific background required?
- Once selected, is education and training provided for new crime scene investigators? Does this initial training include mentoring? Are specific training courses available? What is the length of the initial training period for a crime scene investigator? What topics does the initial training include?
- How are the professional skills of crime scene investigators maintained and developed? Is ongoing training available for experienced crime scene investigators?
- What is the turn-over rate for individuals assigned as crime scene investigators? What is the average length of service for crime scene investigators?



# 5. Forensic analyses and examinations in a laboratory or medical facility

*Chapter objective: to guide the assessment of individual forensic laboratory(ies) and medical facility(ies)<sup>4</sup> in the country.*

This chapter of the tool should be used to assess each laboratory separately.

## 5.1 General laboratory information

### Sample questions: general laboratory information

- What is the name of the laboratory? To what agency is the laboratory affiliated (e.g., Ministry of Justice, Ministry of Interior)? What is the address of the laboratory (include street, postal code and city)? What are the telephone and fax numbers for the laboratory? What is the e-mail address for the laboratory? What is the name of the laboratory director? If not the director, obtain the name of the main contact person.
- What is the legal status of the laboratory? Is the laboratory an official/designated national forensic laboratory? Are results from the laboratory accepted in court proceedings? Is the laboratory a public or private institution?
- Does the laboratory have subsidiary laboratories? If so, what are the responsibilities of the main (central) laboratory and the subsidiaries? Where are the subsidiaries located?

*[Annex A.3 “General institution information” may be used to record relevant information.]*

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<sup>4</sup> For the purposes of this document, the term “forensic laboratory” is used hereafter to include forensic medical facilities, i.e. sample questions are also applicable to the assessment of forensic medical services.

## 5.2 Scope of services

*Section objective: to guide the assessor in obtaining an overview of the scope of services and disciplines provided by the forensic laboratory.*

It is important to identify the forensic services provided by the laboratory and those that are not. There are several reasons why a laboratory may not offer certain disciplines. There may not be sufficient demand based on the types of crimes being committed in the area served by the laboratory. To avoid duplication, the laboratory may not offer a service which is already offered by another laboratory within the country. If, however, there is sufficient need for the service, the laboratory may need to plan to add the discipline. Detailed information about necessary equipment, training and other costs should be gathered for the development of an implementation plan for the forensic discipline(s) in question.

The assessor is reminded that forensic disciplines may have different names and the tests performed in the laboratory may be grouped in different ways. The assessor should ask for clarification when necessary.

*[Annex A.4 "Scope of services" may be used as a guide in assessing the scope of services provided by the laboratory or medical facility.]*

### Sample questions: scope of services

- What services are available in the laboratory? What are the disciplines/sub-disciplines covered by the laboratory? *[Refer to annex A.4 for a listing of forensic disciplines and sub-disciplines]*
- How are these disciplines grouped/organized in the laboratory? What are the sections/units in the laboratory?
- Is the laboratory providing **crime scene investigation services**? In what type of cases?
- Are forensic medical services provided by the laboratory? Which services: Pathology/autopsy services? Odontology? Anthropology? Forensic medical examinations of live victims (e.g., rape victims and/or assault victims)? Others? Which? Are there legal, cultural and/or religious prohibitions against performing autopsies? Are autopsies performed in all questionable deaths?

## 5.3 Customers

*Section objective: to guide the assessor in obtaining an understanding of the customers of the laboratory and their relationship.*

A public/governmental laboratory will customarily accept requests from other governmental law enforcement agencies (e.g., police, prosecutors, judges, customs, etc.). Other customers may include defence attorneys, insurance companies, or citizens. In some

cases, the laboratory may provide services to an agency to which it is closely affiliated. The level of independence (financial, managerial, etc.) in these instances is important to ensure objectivity. It is also important that sufficient communications exists between the laboratory and customers to ensure that adequate services are provided to address the case questions.

Laboratories may have case acceptance criteria. These criteria may be determined by the analytical resources of the laboratory or may be implemented to address a backlog problem. Limits on the number of cases which may be submitted or limits on the number of samples which may be submitted on each case are examples of criteria which may be included in a case acceptance policy.

### Sample questions: customers

- From what agencies does the laboratory accept requests for **analysis**? What agency is the main customer of the laboratory?
- Do the customers need permission prior to submitting a case to the laboratory? Who are the individual or agency approving laboratory submissions? Is the procedure to request **examinations** and **analyses** the same for all customers?
- Are customers charged for laboratory services? Which customers are charged? How are these charges determined?
- Are there limitations on the annual number of cases which can be submitted to the laboratory? Are there limitations on the number of samples per case submitted? Does the laboratory have the right to refuse cases? What are the criteria used?
- When a case is submitted to the laboratory, is there any discussion between forensic personnel and the customer submitting the case? Prior to beginning analysis, is there any discussion between the laboratory and the customer on the types of analyses which will be most likely to answer the case questions? Are there regular “case conferences” as the analysis and the case proceed? Is there any agreement between the laboratory and the customer on a deadline for providing the report?
- Do customers inform the laboratory if analyses are no longer required?
- Are forensic findings used other than for criminal proceedings? For which purposes?

## 5.4 Laboratory staff selection and training

*Section objective: to guide the assessor in obtaining a detailed understanding of laboratory staff, to include personal competencies, formal education, training and experience.*

Laboratory counts scientific staff (professional and technical staff) and administrative staff. Scientific staff is the most critical laboratory resource. Professional staff, also called forensic scientists/forensic experts, usually have a scientific education (background) with

tertiary qualifications (BSc, MSc or equivalent, PhD). Technical staff, also called laboratory technicians, usually are graduates with a diploma from a technical college. In addition to performing laboratory work, professional staff in many countries may testify as expert witnesses in court proceedings.

In addition to a formal scientific education, forensic scientists need personal competencies, training and experience. The personal competencies include analytical thinking and decision making, attention to detail, and written and oral communication skills, and are normally considered during the recruitment and hiring process.

Initial training is also needed to qualify an individual as a forensic expert. Forensic training builds on the scientific education and provides the specific knowledge, skills and abilities necessary for work in the laboratory and within the specialty area (e.g., DNA, toxicology, etc.). There are many training options, including on-the-job training such as in the form of an apprenticeship or mentoring, or a formal training period in the laboratory with in-house training courses. Training may also be provided at other laboratories. Training is needed for continued competency and specialization. Access to relevant scientific literature is also important for continued learning. The assessor should get copies of and review training curricula available.

Experience contributes strongly to the development and capability of a forensic expert. Obviously, experience is something that can only be gained with time. As a result, incentives to retain experienced staff and the staff retention rate should be considered when assessing the experience level of forensic expertise in the laboratory.

*[Additional guidance on staff skill requirements for the core forensic disciplines is available in the UNODC manual "Staff Skill Requirements and Equipment Recommendations for Forensic Science Laboratories", available on-line at [www.unodc.org](http://www.unodc.org).]*

### Sample questions: laboratory staff selection and training

- How many staff work at the laboratory? Of these, how many are professional staff with a relevant degree in science (BSc, MSc or equivalent, PhD) or medicine (e.g., M.D., PhD, DDS, etc.) from a university? What are the duties and responsibilities of staff members with relevant university degrees? Are staff without relevant degree in science assigned with the same duties and responsibilities? How many are technical staff graduates with a diploma from a technical college? How many are administrative staff?
- Is the number of staff sufficient for the caseload? If not, in which disciplines is additional staff needed? Is the number of staff sufficient to maintain an adequate level of in-house research and development?
- What is the retention rate of staff? What incentives exist to retain experienced staff?
- How are professional and technical staff selected for their positions? What are the required competencies and qualifications (educational, professional experience and personal) for professional staff? And for technical staff?
- Have the forensic medical experts got recognizable forensic medical qualifications, or are they hospital doctors or general practitioners simply doing the forensic work?

- Are training opportunities available to scientific staff? How are training needs identified? Is there a requirement for regular participation in training courses?
- Is training provided in-house? Is training provided externally? Is the training basic or advanced? What training courses are available? Is training on the use of scientific techniques provided, for instance on GC techniques? Is training provided for individual forensic disciplines in the laboratory? In which disciplines is training provided? Is training provided for interpretation of results and for court testimony? Is training on management and non-scientific issues provided?
- Do the training courses have curricula? Are training courses documented?
- Are training courses evaluated periodically? By whom? Are evaluation reports of the various training courses available?
- Does the laboratory have access to scientific information/literature/books? Does the laboratory have internet access for laboratory staff?
- Does the laboratory provide training to external scientific staff? If so, is the training national, regional and/or international? In which disciplines is the training provided? Why is this external training provided?
- Does the laboratory provide training for law enforcement officers (e.g., police officers)? Is this awareness-raising training? Does it include practical parts, e.g., on initial actions at the scene? Does the laboratory provide forensic training for crime scene investigators? What is the curriculum of the training for **crime scene investigators** provided by the laboratory? How long lasts the course? Are these training courses included in the curriculum of law enforcement academies?
- Is there any current or planned external assistance to upgrade forensic capabilities? [*See also chapter 7, section 3 “Donor coordination”.*]

## 5.5 Facilities and sample handling

*Section objective: to guide the assessor in obtaining a detailed view of forensic facilities and sample handling procedures.*

Fit-for-purpose facilities, and laboratory space that is adequate for the functions being performed, ensure the delivery of reliable, efficient and cost-effective forensic services. For example, certain sample handling functions (e.g., evidence receipt and evidence storage) must be separated from analytical functions (e.g., wet chemistry and instrumentation).

Adequate sample handling procedures and storage facilities should be available. For example, some biological samples may require refrigeration or freezing. Other conditions such as hermetic (airtight) seals, protection against bacteria or sunlight may also be necessary for sample preservation and storage. Ideally, the laboratory layout provides some flexibility for expansion or laboratory improvement.

Laboratory conditions should be appropriate for the analytical tests being conducted, and allow instrumentation to function properly. Some instruments may require stable utilities (e.g., electricity, temperature, water, etc.).

Conditions, such as laboratory security, access control, and staff health and safety, should be appropriate for the laboratory operations.

Sample handling procedures should also be appropriate to ensure sample integrity. These procedures include sample labeling (e.g., with a unique identifier) and other requirements to prevent sample mishandling such as sample loss and switching. Sample handling procedures also include steps to prevent sample **contamination**. These may include: wearing gloves; using protective clothing; using appropriate procedures to separate victim and suspect samples; and cleaning examination rooms and equipment.

A laboratory information management system (LIMS) may be available to ensure control over routine procedures and facilitates the management of data generated in the laboratory.

*[Additional guidance on laboratory layout and setup is available in UNODC manual "Staff Skill Requirements and Equipment Recommendations for Forensic Science Laboratories", available online at [www.unodc.org](http://www.unodc.org).]*

### Sample questions: facilities and sample handling

- Are the laboratory facilities fit-for-purpose/adequate for the functions and analyses performed? What is the size and layout of the laboratory? How many laboratory rooms are there? Are separate rooms available for:
  - Sample receipt?
  - Wet chemistry?
  - Instrumentation?
  - Storage of chemicals?
  - Evidence storage?
  - Bulk storage?
  - Balances (weighing)?
  - Office (report writing)?
  - Examination of contamination-sensitive items?
  - Forensic medical facilities: Refrigerated and clean body storage facility; room, which is clean, to undertake dissection, with fixed or movable tables, plumbing delivering water to the table, related instruments, hand washing facilities and with adjacent change rooms including shower facilities; histology laboratory; special storage space for retained organs and tissues, including skeletal tissue.
- How is the access to the evidence storage room controlled? Are special storage conditions (e.g., low temperature) available, if needed?

- Does the laboratory layout allow for the possibility for expansion? Would the facility allow for an increase in the number of analyses and/or new types of analyses to be performed?
- Does the laboratory have access to appropriate utilities and supplies? Do these include:
  - Uninterrupted electricity power supply?
  - Purified water, where necessary?
  - Air-conditioning, where necessary?
  - Internet access?
- What security measures are being used in the laboratory? Is entrance to the laboratory restricted and is access controlled? Are visitors required to register when entering the laboratory? Are the doors to the laboratory locked?
- Are appropriate measures in place and used to ensure safety and health of staff (e.g., fire suppression equipment, safety showers, eye washes, chemical fume hoods)? Do hazardous chemicals have warning labels? Do employees have periodic medical check-ups?
- How are samples handled in the laboratory during **examinations** and **analyses**? Is each sample labeled with a unique number? How is the integrity of evidence documented (chain of custody)? What contamination prevention measures are used in the laboratory?
- Is there any current or planned external assistance to upgrade laboratory facilities? [See chapter 7, section 3 “Donor coordination”.]
- Are there plans to expand/move facilities in the next 2-3 years?

## 5.6 Laboratory equipment, procedures and materials

*Section objective: to guide the assessor in obtaining a detailed view of the technical resources of the laboratory.*

Laboratory equipment should be fit-for-purpose/adequate for the types of forensic **examinations** and **analyses** being carried out in the laboratory. [See annex D “Routinely Used Forensic Techniques” for a listing of commonly used techniques in the various forensic fields.]

Local socio-economic conditions may also be a factor in determining the availability and appropriateness of equipment. It is important for the assessor to be aware that the equipment available in a laboratory is not, of itself, a reflection of the quality of the services provided: quality forensic **casework** can be performed with very basic equipment by staff with appropriate education, training and skills. Complex analyses may require more sophisticated equipment.

Equipment needs maintaining to keep it in good working order by a vendor maintenance service or by staff trained to provide instrument maintenance in-house to ensure quality

of the work performed. Supplies should be available, to include those needed for instrument operation such as purified air and gases (e.g., nitrogen, oxygen, hydrogen, argon, helium, etc.), as well as spare parts and consumables, including solvents and reagents.

Forensic laboratories validate their methods and procedures. Standard operating procedures (SOPs) based on these **validations** should be available for all technical tests and instruments used.

The materials and accessories available in the laboratory should also be fit-for-purpose for the techniques, methods and procedures used.

In addition, reference materials and reference collections are often used in a forensic laboratory. **Reference materials** are substances, one or more properties of which are sufficiently well established to be used for the calibration of an apparatus, the assessment of a measurement method, or for assigning values to materials. They can be **certified reference materials** obtained from a recognized standards authority or in-house reference materials whose composition has been established by the laboratory, for example by a reference method or in collaboration with other laboratories. Reference materials and certified reference materials play a central role in chemical analyses and should have relevant certificates of authenticity.

**Reference collections** are sets of samples and objects used in forensic casework for identification and comparison purposes (e.g., firearms and ammunition; genuine banknotes; ID documents; glass particles; shoe soles; drug packaging; inks).

*[Additional guidance on laboratory equipment, material and accessories is found in UNODC manual "Staff Skill Requirements and Equipment Recommendations for Forensic Science Laboratories", available online at [www.unodc.org](http://www.unodc.org).]*

### Sample questions: laboratory equipment, procedures and materials

- Which techniques are available in the laboratory? Which techniques are in use? For example:
  - Optical detection (forensic light sources, multispectral imaging)
  - Electrostatic detection systems
  - Photography: digital or analogue, black and white or colour, polaroid
  - Casting techniques for 3D marks
  - Microscopy (e.g., stereomicroscopy, brightfield microscopy, comparison microscopy, SEM)
  - Colour tests (for drugs, GSR, biological material), immuno-chromatographic tests
  - Microcrystal tests
  - Serial number restoration
  - Fingerprints detection and enhancement (e.g., DFO, ninhydrin)
  - Chromatography (e.g., TLC, GC, HPLC)

- Spectroscopy/spectrometry (e.g., UV-VIS, FTIR, X-Ray analysis)
- Techniques for DNA analysis
- Techniques for computer forensics and audio and video recordings
- Histology, including special staining techniques, for preparing post mortem tissue specimens for microscopy
- Radiography (e.g., for fractures, foreign body identification—metallic fragments, dental evaluation and comparison)
- Which techniques are used in the various disciplines/units of the laboratory? *[Annex A.5 “Available laboratory procedures and equipment” may be used as a guide when assessing the techniques used in the various forensic disciplines in the laboratory.]*
- Is the equipment appropriate for the analyses needed? Is equipment lacking for any essential analyses?
- Is all laboratory equipment in good working order? Are supplies and spare parts available for the equipment? In the event of a malfunction, is there backup or alternative equipment available?
- Is there an uninterrupted supply of consumables, chemicals, gases and solvents? How are these materials obtained? Are there any difficulties faced in purchasing and getting these materials?
- How is the equipment maintained? Has the laboratory a maintenance service contract? Is maintenance provided in-house? Is maintenance provided by vendors or instrument suppliers?
- Have scientific staff been trained and are competent to use the available equipment? For recently acquired equipment, has initial training been provided with the equipment?
- Does the laboratory have written procedures for the analyses performed in the laboratory and operation of equipment available? Have these procedures been validated? Are the validations documented? Is there a manual with Standard Operating Procedures (SOPs)? *[Additional guidance to assess the quality of the work in the laboratory is found in chapter 5, section 9 “Quality assurance”.]*
- Are preliminary analyses (screening) used prior to confirmatory analyses? What techniques are used for preliminary analyses in the various disciplines of the laboratory? What techniques are used for confirmatory analyses in the various disciplines of the laboratory?
- Does the laboratory have access to reference materials necessary for casework? Are they certified reference materials? Where does the laboratory obtain its reference materials? Who is authorized to use the reference materials?
- Are reference collections used in the laboratory? What are those collections: firearms? Genuine banknotes? Genuine ID documents? Drug samples of known origin? Others?

- Who is responsible for the reference collections (e.g., maintenance, tracking, updating, completeness, integrity, access authorization, etc.)? Who is authorized to use the reference collections? If there are currently no reference collections, are there any plans to create any?
- Is there any current or planned external assistance to improve technical resources of the laboratory? [See chapter 7, section 3 “Donor coordination”.]

## 5.7. Reporting

*Section objective: to guide the assessor in obtaining an overview of how the laboratory reports the results of its **analyses** and **examinations**.*

At the conclusion of analyses, the forensic science laboratory issues a report. This report includes the actual results of analyses performed. Many results, however, need to be interpreted by a forensic expert. As a consequence, forensic reports also include a section presenting the interpretation of the results. A clear distinction is made between the outcomes of the analysis (e.g., observations, measurements) and the interpretations (conclusions) of those outcomes.

Laboratory scientific staff may testify in court proceedings. This testimony should be supported by the analyses performed and should be consistent with the report(s) issued. The laboratory or courts may require specific credentials or qualifications from laboratory staff providing expert testimony.

### Sample questions: reporting

- Are written reports systematically issued? If not, when is a report not issued? Are reports issued for inconclusive or negative results? Is verbal reporting (e.g., by telephone) used as an alternative for a written report? If so, what governs this approach?
- How are the results of analyses and examinations performed presented? How are reports structured? Are results interpreted? Is a clear distinction made between the results of the analyses and the interpretation of the results?
- Does the laboratory receive sufficient circumstantial information to provide useful reports, i.e., is the laboratory in a position to interpret the results they produce in the circumstances of the particular case?
- Do laboratory scientific staff testify in court? Are there special qualifications for laboratory staff to testify as experts? Are there special requirements related to analyst availability (e.g., requirement that only the analyst that did the testing of the samples could present those findings in court)?

## 5.8 Databases

*Section objective: to guide the assessor in obtaining information about existing databases.*

Searchable **databases** are powerful tools used by forensic laboratories. These databases can be divided into two broad categories: national databases and in-house/internal databases.

- National databases. National databases are typically created for DNA, fingerprints, and ballistics. DNA and fingerprint databases contain unique and unchangeable biometric information linked to an individual. Ballistics databases contain information which can link projectiles and casings to crimes. In most countries national legislation exists which defines legal and technical requirements for these databases [see chapter 3 “Legal Framework”]. Forensic laboratories are often maintaining and administering these databases. International sharing of database information is contributing significantly to the investigation of cross-border crime. At the same time, issues related to the legal authority for establishing/maintaining databases and privacy issues need to be considered.
- In-house databases. Laboratories may have in-house/internal databases which are essentially collections of information about materials encountered in past **casework**. Examples include databases with information on shoeprints, tyre marks, glass particles, paint particles, fibres and chemical profiles of drugs. Computer technology allows this information to be easily stored, searched and retrieved. These databases are primarily used by laboratories to assist with identifying materials in casework. They are also used to establish links with other cases and to assist with recognizing patterns.

### Sample questions: databases

- Are there national databases available? Are there databases for:
  - Fingerprints (Automated Fingerprints Integrated System, AFIS)?
  - DNA
  - Ballistics
  - Other? (Specify)
- Who is responsible for maintenance, backup, uploading and updating, completeness, integrity, access authorization to national databases? Who uses/is authorized to use the databases? Are the databases used only by laboratory staff or are they available to others as well?
- Are data shared among different law enforcement agencies (e.g., civil police, gendarmerie and customs)?
- Are data shared internationally? If yes, for what purposes? What mechanism is used for data sharing? Are there any legal issues with the international use of the forensic databases? Who “owns” the forensic data in the database? Is there privacy legislation in place which regulates the use of the data in the

database? Does legislation limit the use of forensic data in the database? [See chapter 3 “Legal framework” and chapter 6 “Using forensic data and information”.]

- Do national databases also contain personal data, e.g., photo identification cards, passport applications? Does legislation allow these data to be used in criminal investigations?
- Does the laboratory maintain in-house/internal databases with materials from casework? Are these databases hardcopy or electronic? What types of databases exist: Shoemarks? Tyremarks? Glass? Paint? Fibres? Chemical profiles of illicit drugs? Other? Which?
- In the forensic medical field, are autopsy databases or photography databases of injuries from post mortem or clinical cases being maintained?
- How are the in-house databases structured? What characteristics are used to classify the collected items? Who is responsible for the in-house databases (e.g., for maintenance, backup, uploading and updating, completeness, integrity, access authorization, etc.)? Who uses/is authorized to use the databases? (If applicable: are these databases available to subsidiary laboratories as well?)
- If there are currently no national or in-house databases available, are there any plans to create one or more of them? Does the laboratory receive external assistance to establish the necessary database infrastructure? [See chapter 7, section 3 “Donor coordination”.]

## 5.9 Quality assurance

*Section objective: to guide the assessor in obtaining information about the quality assurance measures in place in the laboratory.*

The primary responsibility of a forensic science laboratory is to provide reliable and timely scientific evidence which can be used in criminal investigations and court proceedings. Numerous **quality assurance** procedures are implemented by laboratories to monitor, measure and improve the quality of the work conducted. Some of the relatively simple quality assurance measures implemented by a laboratory may include:

- Documented staff training
- Unique identification of exhibits and controlled exhibit handling/storage
- Method **validations**
- Use of written methods and procedures
- Provision of Standard Operating Procedures (SOPs)
- **Contamination** avoidance and monitoring
- Use of **(certified) reference materials** [for definition see glossary or chapter 5, section 6 “Laboratory equipment, procedures and materials”]

- Instrument calibrations and instrument maintenance records
- Use of blanks, check standards, duplicate analyses, sample/data transfer checks,
- Calculation checks, peer review, audits
- Participation in inter-laboratory comparisons (**proficiency tests** or **collaborative exercises**).

The assessor should get documentation related to the implementation of these measures.

In some cases, a forensic science laboratory may implement a formal **quality management system** (QMS) based on international standard(s). ISO/IEC include ISO 17025 which is the most frequently used standard for forensic laboratories; ISO9001 which describes a QMS but does not address technical requirements; and ISO 17020 which has been adopted for **crime scene** work in some parts of the world. A laboratory that meets the requirements of the ISO 17020 or ISO 17025 can request recognition of specified aspects of its work by an official independent accreditation body. The assessor should get a copy of the Schedule of Accreditation and the most recent (re-) assessment report.

Additionally or alternatively, a laboratory, person or product may be certified by an independent certifying body as formal recognition that the body, person or product complies with given specifications (e.g., for its QMS in compliance with ISO 9001)

Quality measures and **accreditation** can be implemented in one or several disciplines in a laboratory. It is therefore important to ask the following set of questions to each of the different departments/units of the laboratory.

### Sample questions: quality assurance

- Does the laboratory implement quality measures? Has a quality manager been appointed? What are the duties and responsibilities of the quality manager?
- For each forensic discipline, does the laboratory have written procedures? Are scientific staff offered training opportunities? Are these documented? [See chapter 5, section 4 “Laboratory staff selection and training”.] Does the laboratory use validated methods for **casework**? Does the laboratory conduct equipment checks? Calibration? Regular maintenance of equipment? Does the laboratory have access to reference materials and/or certified reference materials? [See chapter 5, section 6 “Laboratory equipment, procedures and materials”.] Does the laboratory participate in proficiency tests and/or collaborative exercises? Where does the laboratory obtain its collaborative exercises and/or proficiency tests? What was the recent performance in collaborative exercises and/or proficiency tests? Is casework evaluated or reviewed? Prior to being responsible for casework, do scientific staff complete proficiency tests and/or collaborative exercises? What are the measures in place regarding the number of duplicate analyses to be carried out?
- Is the laboratory accredited? What are the disciplines accredited? Against which ISO standard? What is the name of the accreditation body? When was the laboratory accredited? Date of last (re-)assessment? Obtain copy of report.

- If the laboratory is not yet accredited, has the laboratory begun the accreditation process with an accreditation body? What are the disciplines being in the process of accreditation? What is the name of the accreditation body? What is the target date for accreditation?
- Does the laboratory receive external assistance to establish and improve its quality procedures? [See chapter 7, section 3 “Donor coordination”.]

## 5.10 Caseload

*Section objective: to assist the assessor in obtaining information about the capacity of the laboratory to meet its caseload demand and analyze its cases in a timely manner.*

**Caseload** characteristics data is essential in order to estimate the demand for the services of the laboratory and to assess the capacity of the laboratory. These statistics are often collected on an annual basis. However, in many situations, the best that an assessor can expect is partial data on caseload from which estimates will have to be derived.

The primary objective of a forensic science laboratory is the **analysis** of evidence, therefore the number of cases (caseload) submitted to the laboratory, the number of cases completed and the length of time to complete the cases (turnaround time) are metrics/statistics used to measure the work performed by the laboratory in a given period of time.

Those data are difficult to compare among laboratories because work is not defined uniformly. Laboratories may differ in the amount of work performed on a case. Most laboratories establish case acceptance and case analysis policies which determine the types and number of samples analyzed per case. There are also differences in the statistics used by the laboratory to measure work. For example, some laboratories will base their statistics on cases, while others may base their measures on the individual items of evidence in a case, or even on the number of tests carried out. A case (judicial entity) is often defined by an incident being investigated and may include multiple items of evidence in one or more forensic discipline. Those laboratories basing their statistics on items or tests appear to have more work than those laboratories which base statistics on cases. Laboratory **quality assurance** measures may also differ among laboratories. These quality measures may affect the amount of work performed. Turnaround times among laboratories are dependent on both the amount of work performed on cases as well as the number of analysts performing analyses in the required disciplines.

As part of the assessment all relevant information about legal and technical requirements impacting on caseload and turnaround time should be collected.

### Sample questions: caseload

- What is the number of cases submitted to the laboratory per year (= number of requests from the customer that may include forensic investigations in one or several forensic disciplines)?
- One case may include several exhibits/samples, what is the number of samples submitted to the laboratory per year?

- What is the number of scientific staff in full time equivalent for each forensic discipline? (For example, if one expert works  $\frac{1}{2}$  time in a discipline and another works full time in the same discipline, then together they provide 1.5 full time equivalent positions in that discipline.)
- What is the turnaround time? (=the average number of days/weeks a case remains in the laboratory before being reported.)
- Are those data available for the different disciplines? If yes, the set of questions above can be used to gather this information.

*[Annex A.6 “Caseload statistics for the last full calendar year” may be used to collect those data.]*

## 5.11 Management and planning

*Section objective: to guide the assessor in obtaining an overview of the management and planning systems of the forensic laboratory, to include budget and financial support.*

Effective management and planning systems are very important for a forensic laboratory. Management support for quality systems will ensure such systems are implemented and will have a positive effect on forensic services. Management and planning will also maximize the resources available to the laboratory, even in situations where human and financial resources are limited. Although forensic laboratories have some unique characteristics, general principles of good management and planning (e.g., finance, planning and control, human resources, etc.) do apply.

### Sample questions: management and planning

- Who has the ultimate responsibility for managing the laboratory? What is his/her mandate? To whom is he/she accountable?
- What is the management structure of the laboratory (e.g., director, deputies, heads of departments and support staff)? Does the management staff meet regularly (i.e., are meetings structured and scheduled)? Are minutes of these meetings taken? To whom are the minutes distributed?
- How is the laboratory financed? Publicly or privately? If publicly, by which ministry? By the Ministry of Justice, Ministry of Interior, etc.? Does the laboratory have an annual budget? If so, what parameters are used when developing the budget? How is budget planning and control organized? Does the laboratory conduct internal reviews (e.g., monthly, quarterly or annually) of the budget? How does the laboratory control costs?
- Does the laboratory require customers to pay for service? If so, is this payment based on the requested **analysis**? Obtain details on costs per different analysis.

- Are there sufficient resources for consumables to carry out routine work and to maintain/replace equipment and **databases**? Are there sufficient resources for quality procedures/improvements/**accreditation**? Is funding for support programmes (e.g., research and development, training, participation in scientific conferences) available? From internal or external funds?
- Is there structured training for laboratory staff? Is there succession planning (i.e., is there a mechanism to replace managers and staff who resign or retire)? Does the laboratory encourage/support its staff to participate regularly in regional/international scientific meetings and conferences? [*See also chapter 7, section 2 “Scientific community”.*]
- Does the forensic science laboratory use subcontractors to analyze **casework** materials? If so, what is included in these subcontracts and how are they determined? How is the **competence** of the subcontractors assessed? Does the forensic science laboratory use subcontractor(s) for other services (e.g., research, training or **quality assurance**)?
- Does the laboratory collect metrics/statistics (e.g., **caseload**, turnaround time, number of staff, etc.) and are these statistics used as a management tool?
- Is there (or have there been) nationally/internationally funded assistance programmes provided to the laboratory? [*See also chapter 7, section 3 “Donor coordination”.*]



## 6. Using forensic data and information

*Section objective: to assist the assessor in obtaining an overview of how forensic data and scientific findings are provided to and used by the criminal justice system and other customers.*

Scientific findings/information/data provided by **forensic service providers**, mostly by laboratories, are used by different stakeholders for different purposes.

Within the criminal justice system, results reported by laboratories are used to guide the investigative process and as evidence in court proceedings. Forensic information in **data-bases** (e.g., fingerprints or DNA) are shared with other agencies, both nationally and internationally, for various investigative and identification purposes. Forensic data can also be used for intelligence gathering and national security.

Forensic data and statistics can also be used outside the criminal justice system. For example, data may be collected and analyzed to determine drug trends. Forensic information, statistics and metrics can also be used for other non-criminal purposes to include: strategic analyses, policymaking, regulatory needs, legislation, budget planning, and health and research purposes.

### Sample questions: using forensic data and information

- What role does forensic evidence play in crime investigations and the criminal justice system?
- Are forensic results used early in an investigation to guide further actions and to direct the investigation processes? [*See also chapter 5, section 3 “Customers”.*]
- Are forensic results used as evidence in court proceedings? Are findings reported by forensic laboratory(ies) generally accepted by those within the criminal justice system (e.g., prosecutors, defence lawyers, courts, etc.)? Do those within the criminal justice system use forensic data to support the criminal justice process? Is the **quality assurance** of forensic data a consideration for those in the criminal justice system?
- Are forensic data used to provide intelligence for law enforcement strategic activities?

- Are forensic data and information collected for other purposes than casework? Are they regularly used for a given purpose? Is there a specific structure or format used to collect forensic data for the different purposes? Is the data collection computerized? Are the data compiled or centralized? Who compiles these data?
- Are data collected for national trends analysis and policymaking? Are forensic data used for international reporting on the status of the country? Are forensic data used for strategic planning and/or action-oriented interventions? If so, what data are used and by whom?
- Are forensic data used for legislation or regulatory purposes? If so, what data are used and by whom? Are forensic data used by health authorities? If so, what data are used and for what purposes (e.g., early warning on new drug trends)?
- Does the laboratory use the data for its own purposes (e.g., management)? *[See chapter 5, section 11 “Management and planning”.]*
- Do forensic laboratories provide crime trend data? If so, in what disciplines are trend data provided?
- Are forensic science laboratory data used for research? If so, what kind of data are used and by whom? Are forensic science laboratory data available for external research?
- Are forensic databases (e.g., fingerprints, DNA) shared internationally? If so, for what purposes? *[See chapter 5, section 8 “Databases”.]*



## 7. Partnerships and coordination

*Section objectives (chapter 7, sections 1 and 2): to guide the assessor in obtaining information about the existence and extent of collaboration, cooperation, coordination and partnerships, both within the criminal justice system and at the scientific level. Chapter 7, section 3 assists the assessor in identifying donor interests and support.*

*[Some of the partnership/coordination issues relate to individual laboratories, others more generally to the scientific community in a country.]*

### 7.1 The criminal justice system

Active cooperation between all stakeholders is needed to ensure that adequate forensic services are provided for the criminal justice system. Obtaining an overview of the nature and extent of collaboration, cooperation and partnership between **forensic service providers** and their customers in the criminal justice system, both in individual cases as well as at higher levels, is therefore an important part of the assessment.

One of the primary challenges within the criminal justice system is communication. Non-scientists (e.g., investigators, lawyers, prosecutors, attorneys and judges) depend on laboratory personnel to provide information and answer questions. Investigators must understand the conclusions that can be drawn from scientific testing as well as the limitations of those tests. Decisions are often based on scientific information provided by the laboratory. Laboratory personnel must communicate effectively with police, attorneys and other members of the system so that the laboratory can provide appropriate services.

To avoid potential communication gaps, it is important that mechanisms be established which enable all stakeholders in the criminal justice system to work in partnership. Laboratories may drive this process, for example, by offering training to police or attorneys on new technology and its potential use. Laboratories may also provide an opportunity for investigators to consult with laboratory personnel during investigations and/or make laboratory personnel available to participate on investigative teams. Whatever the mechanism used, it is essential that the laboratories take an active role in helping all members of the criminal justice system use scientific evidence.

### Sample questions: partnerships and coordination/the criminal justice system

- Is there a national/regional infrastructure for scientific and forensic education, e.g., universities, colleges with dedicated curricula? Is forensic awareness part of the curriculum of national police academies?
- Do investigators understand the possibilities and limitations of forensic **casework**?
- Do forensic personnel understand the legal and investigative issues inherent in the criminal justice process? Do they understand the use of forensic data in the criminal justice system? Do they understand the implications of conclusions based on forensic **analyses** and **examinations**? Are forensic personnel sufficiently versed in relevant legislation?
- Are investigators meeting regularly with forensic service providers during the investigation of a major case? Are laboratory personnel involved in investigative teams? How do investigators and scientists, and prosecuting lawyers and scientists, integrate their work to produce the best results for individual cases?
- How do forensic laboratories ensure that attorneys and law enforcement personnel have the necessary knowledge to effectively use forensic services? Do laboratories provide training to raise awareness about the forensic process and **physical evidence**? Do attorneys and law enforcement personnel and other customers of forensic data understand the possibilities and limitations of forensic analysis and examination? Do they know the right questions to ask and do they understand the answers?
- What mechanisms do the laboratories use to communicate with stakeholders and customers? Are there regular meetings between forensic service providers and their customers? How often? Are there regular training sessions for stakeholders/customers? Do laboratories provide communications/newsletters to stakeholders to discuss/provide information on forensic issues?

## 7.2 The scientific community

**Forensic service providers** are part of a larger scientific community, both nationally and internationally, and their position within this broader community is important.

To maintain and further their expertise, forensic personnel should have regular contact/meetings with other forensic personnel. Where they exist, regional forensic networks and professional associations are ideal platforms for exchanging information. Forensic experts may also make contacts with other experts by regularly participating in scientific meetings and conferences which are often organized internationally.

Contacts with academia, and other scientific laboratories outside the forensic community, both on a national and international level, also provide benefits to forensic service providers. These contacts often facilitate joint projects (e.g., research projects, benchmarking)

and promote quality in forensic services. The cooperation may also lead to **casework** assistance agreements or subcontracting.

*[Annex E: "Overview of forensic associations and international players" provides information on existing regional forensic associations and networks, and relevant international organizations with a mandate related to forensics.]*

### Sample questions: partnerships and coordination/the scientific community

- Do the forensic service personnel regularly participate in scientific meetings and conferences related to their discipline or expertise? Obtain examples of recent participation.
- Do the forensic laboratories cooperate with other forensic laboratories? Do forensic personnel contact other experts? If so, on which subjects, for which purposes, and what type of communication is used (e.g., e-mail)?
- Do forensic personnel meet regularly with other experts to discuss common issues? If so, how often do they meet and how is the participation supported by the laboratory management? Is the laboratory a member in the applicable regional network of forensic service providers? If so, what is the name of the network and what are its objectives/activities? What is the type of cooperation: Training? Exchange of techniques/procedures? Casework? Research? **Quality assurance**? Other? (Specify.)
- Do the forensic service providers cooperate with non-forensic, scientific laboratories? With academia?
- Do the forensic service providers collaborate with UNODC, as either beneficiary or contributor?

## 7.3 Donor coordination

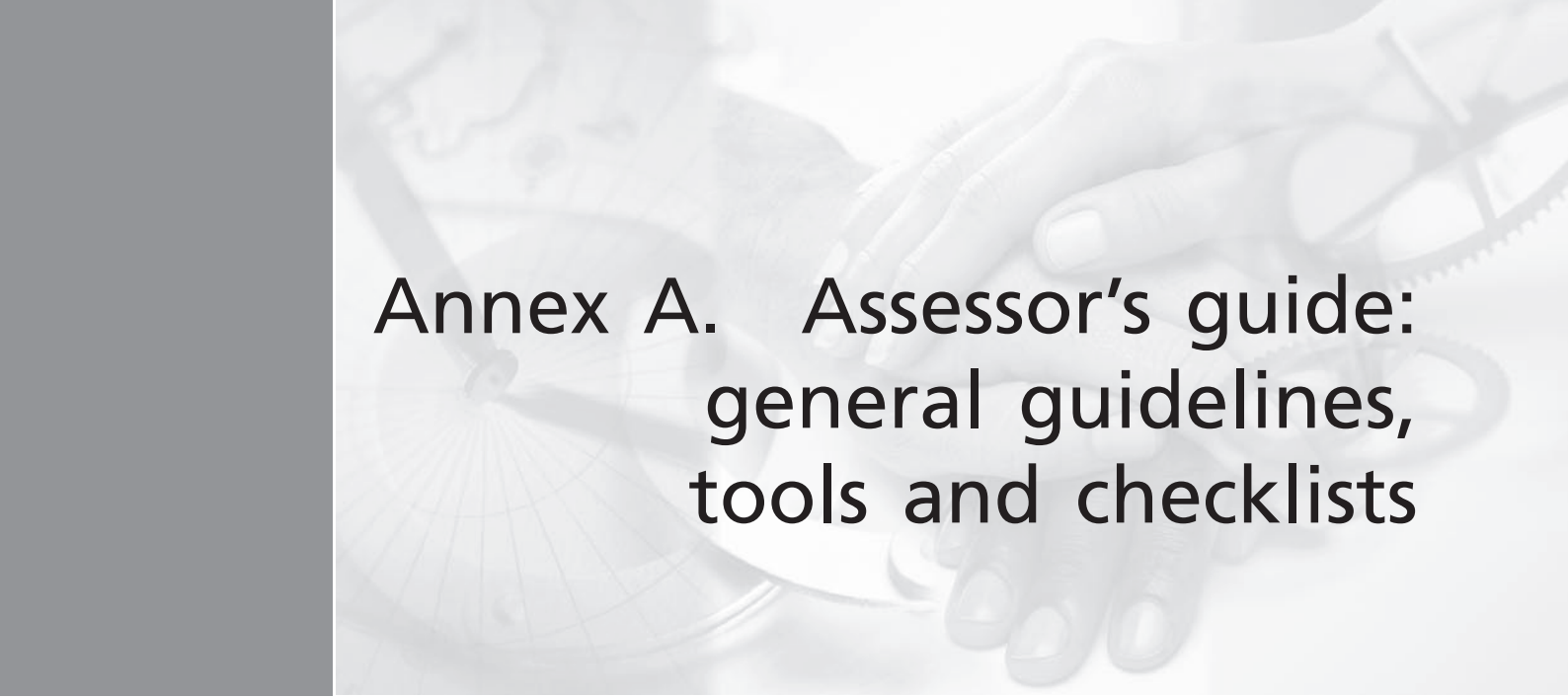
*Section objective: to guide the assessor in determining the extent and scope of ongoing/planned donor support and identify gaps for additional assistance.*

It is important to determine the overall level of external support for the development of forensic services to prevent unnecessary duplication of support activities and to allow the coordination of initiatives. It is also important to understand which previous donor programmes have been successful and sustainable and which have not.

Different donors have different initiatives they are willing to support, reflecting their individual interests.

**Sample questions: donor coordination**

- Are there (or have there been) internationally funded initiatives aimed at developing forensic services? If so, identify the objectives for each of these projects. Are those objectives being achieved? Is there any overlap or duplication among these projects? If there are multiple initiatives/projects, are they being coordinated? Is there a need to call for a donor coordination meeting?
- Which countries or organizations are involved in donor projects? Are any stakeholders and/or donors obvious by their absence?
- Are mechanisms in place that will ensure the sustainability of any sponsored activity? Are there mentoring mechanisms in place?
- Do (or did) these initiatives offer training? If so, are these initiatives training trainers (to deliver cascade training programmes)? Is computer-based training being offered? Was a training needs assessment conducted in advance of these programmes? Are any of those identified training needs still to be addressed?
- Do (or did) these initiatives provide equipment? If so, how was the need for this equipment identified? Was the need for this equipment identified through an independent evaluation? Was a government list used to identify equipment? Are other donors providing the same or similar equipment? Are there plans for how the equipment will be maintained and replaced in the future? Are there examples of the same or similar equipment being provided and then being misappropriated or not being used at all? Were staff trained to use the equipment?
- Have any post-implementation reviews been conducted to identify good practice for a similar programme elsewhere? Are the results of any post-implementation reviews been collated and coordinated for use in future planning? Obtain copies of available reviews.



# Annex A. Assessor's guide: general guidelines, tools and checklists

## A.1 General guidelines for conducting assessments

What follows are general guidelines for conducting assessments, reproduced from the CJAT for the stand-alone Tool on forensic services and infrastructure assessments. The guidelines are a distillation of the experience of some sixty experts in criminal justice who participated in the process of formulating the initial toolkit. While not comprehensive, these guidelines are applicable to all assessments; assessors may wish to review this section in addition to the sector-specific and cross-cutting tools in preparation for an assessment mission.

### **CLARIFY**

Understand what the terms of reference are seeking and clarify any unclear requirements. What level of effort is expected? What resources are being dedicated for the assessment? How long is the assessment mission? What is the composition of the assessment team, if there is a team? Will the team include national or local experts? (The use of national or local experts can help build confidence and credibility from the outset with the country's leadership.) How will the assessment be coordinated among the team members? Who is responsible for what?

For whom is the assessment intended? What is the final use of the assessment? What information obtained in the course of the assessments may be restricted legally from being disseminated? It is important to understand any secrecy/confidentiality provisions and what exceptions may exist. Just as important is gaining an understanding of the political sensitivities that may be associated with issues covered in the assessment.

Understand the purpose of the assessment mission. An assessment mission is usually intended to be the beginning of developing a working relationship in order to build the capacity of a criminal justice system to function according to international standards and norms. Assessment missions are not inspections, nor should they be conducted as such.

### **PREPARE**

#### **DEVELOP BACKGROUND MATERIAL**

Preparatory research is critical to a successful assessment mission. Before arrival, it is essential to develop an understanding of the broader political, legal, economic, cultural and social reality of the region and country. Only when examined in this larger context can the criminal

justice system and the challenges it may be facing be understood—and only then can technical assistance interventions be appropriately designed. It is important, therefore, to examine the historical and political legacy of the criminal justice system. What are its sources and influences, both ancient and modern? How quickly has the country undergone political changes, especially recently? A country undergoing rapid and abrupt changes in political, economic, and social systems may face challenges other than a stable, slowly evolving one. What is the country's ethno-cultural heritage? If it is multicultural, has it been a peaceful coexistence? What is the influence of traditional systems of justice? What is the unique interplay of all these influences in this country? A wise assessor does not make assumptions, however. Proximity to or a common legacy with another system does not necessarily mean it will be the same. Confirm your understanding on an ongoing basis, recognizing there will also be multiple perspectives.

Becoming conversant with the current contextual influences is just as essential. What is the general situation in country? What are the trends? How do ongoing economic, social and political changes impact upon the functions of the criminal justice system? What is the current economic situation—and its outlook? What sorts of reform initiatives are underway in government generally and in the area of justice in particular? What are the issues challenging the criminal justice system? What are the crime trends?

It would be helpful to gain at least a sense of what the capacity for delivering criminal justice might be. What are the basic resources available? Are basic services generally available? Does the country develop its human resources? Is there a population of educated and trained workers and criminal justice professionals?

What are the country's current political and development priorities? Has the leadership demonstrated the political will to confront the problems that may be challenging the government, the criminal justice system, and threatening or denying its people's fundamental right to justice? Has the government adopted laws and procedures that provide a model framework, yet not taken the steps to implement them? Does it have the political will to do so?

Research into contextual information and obtaining a measure of a country's capacity can often be conducted on the internet, using governmental country reports, scholarly papers, and reports by international and local non-governmental organizations, not to mention the media. [See also the Tool “Cross-Cutting Issues: Criminal Justice Information”, available online at [www.unodc.org](http://www.unodc.org),<sup>5</sup> to develop the information needed about the criminal justice system].

In addition to assembling the contextual and capacity information above, in order to ensure a productive mission, it would be helpful to:

- Gain a basic understanding of the justice system, including policing, the structure of the court system, the role of the prosecutor and/or investigating judge, and the system of law.
- Identify, locate, and read any previous similar assessments.
- Request, in advance where possible, statistical and management reports. These may take time to obtain and may need to be translated.
- As noted above, read country and regional reports, both international and national. Most of these are readily available on the internet.
- Meet with individuals, institutions, and professional organizations concerned with the issues you may encounter on the assessment mission, as well as donors including

<sup>5</sup>The specific link as at November 2009 is: [www.unodc.org/unodc/en/justice-and-prison-reform/Criminal-Justice-Toolkit.html](http://www.unodc.org/unodc/en/justice-and-prison-reform/Criminal-Justice-Toolkit.html)

embassies providing bilateral assistance. These sources may provide valuable background information for conducting a thorough assessment as well as invaluable in-country contacts.

- Consider and determine which of the full range of research tools will be used in the assessment mission, including:
  - Document study;
  - Interviews;
  - Focus groups;
  - Use of questionnaires/surveys;
  - Site visits.
- Where possible and where local support is being provided, try to obtain appropriate clearances and appointments. While some site visits could be both last minute and unannounced, it is both considerate and resource-savvy to schedule appointments with adequate advance notice.
- Every assessment is different and may present unique challenges. The more extensive the preparation prior to an assessment mission, the greater the capacity to manage these challenges.

#### **DURING THE ASSESSMENT MISSION:**

- **LISTEN—AND RESPECT THE SPEAKER!** You are conducting an assessment to learn, not to lecture.
- Repeat your questions in different ways. There may be different answers.
- Remember that the Tools, with their detailed questions are designed for your thinking process. While they should guide you in the questions you may want to ask, reading a list of questions at an interview subject, rather than engaging in a conversation, may be counterproductive.
- Conduct interviews as privately as possible.
- **ASK TO BE SHOWN HOW THINGS WORK**, rather than to be told. Site visits reveal more than any briefing ever can, as do practical demonstrations.
- **ASK PEOPLE TO SHOW YOU WHAT THEY DO.**
- **WHAT ARE YOU NOT SEEING?** What's missing from the picture? Why?
- Ask for supporting documents.
- Visit multiple locations when conducting site visits. Where possible, pick the sites to be visited, choosing both urban and rural settings as well as settings of varying socio-economic levels. What may be available in the nation's capital may not be implemented anywhere else in the country, so an assessment conducted only by visiting sites in the capital may produce an inaccurate assessment.
- **CORROBORATE!** Wherever possible, corroborate information by consulting a wide range of sources. These sources should include:
  - Representatives from central and local government;
  - United Nations (UN Development Programme, Department of Peacekeeping Operations, the Office of the High Commissioner for Human Rights, Office on Drugs and Crime), the European Union, Council of Europe, Organization for Security and Co-operation in Europe, the African Union or the Organization of American States; and other regional and international law enforcement organizations;

- Lawyers, including legal aid/public defenders;
- Judges;
- Academic institutions;
- Donor countries;
- Assistance/aid agencies.

*[See the suggested sources and contacts in annex A.2 “Checklist”.]*

Knowing when one has spoken to enough sources is always a matter of judgment, depending not only on the availability and willingness of sources to be forthcoming, but also on the amount of time allocated in the terms of reference for the mission. When reporting unsubstantiated information, assessors should indicate the extent to which they consider that unsubstantiated information is credible and why.

#### **AFTER THE ASSESSMENT MISSION:**

Confer with the individuals, institutions, and organizations you met with previously regarding observations that may need explanation or issues that remain unresolved or unclear. Follow-up is key. An assessor’s credibility rests on whether and what he or she delivers.

While the terms of reference will sometimes dictate the format of a report, suggestions for what should be included in an assessment report follow. In general, conclusions reached must be objective, reliable, verifiable, valid and comprehensive. Where assessors are unable to draw conclusions because of conflicting information or where there are controversies, assessors should preserve the existence of such issues, instead of resolving them, as they may provide insight for future programming.

Assessors may wish to provide the background information that will give depth and context to the assessment and to give the assessment’s intended audience an understanding of the country’s specific issues and challenges in context.

Assessors should seek to identify the key issues that have emerged from various sources, including: government policy papers for reform; donor policy papers for reform; by system stakeholders, staff and users; and by civil society groups. Just as important are the obstacles that may impede reform efforts. Once identified, strategies for their removal or diminution should be part of the intervention planned. Obstacles (or opportunities) may include:

- Prevalence/perception of crime in the community (punitive attitude of government, the population, the media);
- Institutional attitudes to reform (resistance v. openness to accept reform; existence of opponents v. change agents in the upper hierarchy; lack or presence of partnerships with civil society groups);
- Overly hierarchical/centralized decision-making among criminal justice actors;
- Proximity of elections, etc.

Identifying both the short-term and long-term priorities for development should bear a direct relationship to any existing development strategy, including seeking to reduce poverty and improve management reform and governance. Technical assistance interventions that focus only on a specific issue tend to overlook solutions that may be beyond the immediate focus

and are often, as a result unsustainable. Priorities are usually determined via an exercise that ranks them in the following manner:

- Immediate action (i.e. high impact, low/no cost, involving administrative action and no law reform);
- Short term (some cost, visible impact, urgent, involving administrative action, consensus building);
- Medium term (involving further research, strategic planning, costing, public sensitization, building coalitions of interest);
- Long term (law and penal reform, major policy changes, long-term planning and costing, inculcating a rights based approach)

Recommendations for areas of technical assistance interventions must take into account the terms of reference for the assessment, integrate United Nations standards and norms and other relevant international standards, be realistic and sustainable. They should also include a critical path for implementation; a timeline and deadlines; and estimated costs. Assessors are advised to avoid the temptation—and risk—of attempting to transfer the legal system or process from another country simply because it has worked well there.

## A.2 Checklist

The following table is designed to assist the assessor in keeping track of what topics have been covered, with what sources, and with whom.

TOPIC	SOURCES	CONTACTS	COMPLETED
1	INTRODUCTION TO THE ISSUE		N/A
2	OVERVIEW/CONTEXTUAL INFORMATION		
2.1	CRIME SITUATION	<ul style="list-style-type: none"> <li>National statistics</li> <li>Annual reports from laboratories</li> </ul>	<ul style="list-style-type: none"> <li>Staff members of relevant ministries (e.g., Ministry of Interior, Ministry of Justice)</li> </ul>
2.2	FORENSIC INFRASTRUCTURE		<ul style="list-style-type: none"> <li>Courts, prosecutor's offices, police headquarters, and foreign liaison officers</li> <li>UNODC national or regional offices are suggested as initial contacts</li> </ul>
3	LEGAL FRAMEWORK	<ul style="list-style-type: none"> <li>Laws and regulations for criminal proceedings</li> <li>Laws and regulations for police and forensic databases</li> <li>Controlled substances laws and regulations</li> <li>Operational procedures</li> </ul>	<ul style="list-style-type: none"> <li>Directors of law enforcement agencies and forensic laboratories</li> <li>Chief prosecutors, supreme and appellate court judges</li> </ul>
4	CRIME SCENE INVESTIGATION		
4.1	FIRST RESPONDERS	<ul style="list-style-type: none"> <li>Laws and regulations, and operational procedures on crime scene investigation</li> </ul>	<ul style="list-style-type: none"> <li>Directors of law enforcement agencies and forensic institutes</li> </ul>
4.2	CRIME SCENE INVESTIGATION (CSI) SERVICES	<ul style="list-style-type: none"> <li>Crime scene investigation handbooks and training materials</li> </ul>	<ul style="list-style-type: none"> <li>Directors and staff of crime scene units</li> </ul>
4.3	CSI FACILITIES AND EQUIPMENT		<ul style="list-style-type: none"> <li>Foreign liaison officers</li> </ul>
4.4	CSI STAFF SELECTION AND TRAINING		<ul style="list-style-type: none"> <li>UNODC national or regional offices</li> </ul>

## 5 FORENSIC ANALYSES AND EXAMINATIONS IN A LABORATORY OR MEDICAL FACILITY

- 5.1 GENERAL LABORATORY INFORMATION
  - Annual reports
  - Director of forensic laboratory
- 5.2 SCOPE OF SERVICES
  - Organization diagram of the laboratory
  - Staff members with overview of services provided by the laboratory
- 5.3 CUSTOMERS
  - Customers of the laboratory (e.g., police officers, prosecutors, judges)
- 5.4 LABORATORY STAFF SELECTION AND TRAINING
  - Legal duties of the laboratory (found in national legislation)
  - National accreditation body (in case of an accredited laboratory)
- 5.5 FACILITIES AND SAMPLE HANDLING
  - Case reports
- 5.6 LABORATORY EQUIPMENT, PROCEDURES AND MATERIALS
  - Lab operations handbook
  - Quality management manual
- 5.7 REPORTING
- 5.8 DATABASES
- 5.9 QUALITY ASSURANCE
- 5.10 CASELOAD
- 5.11 MANAGEMENT AND PLANNING

## 6 USING FORENSIC DATA AND INFORMATION

- National statistics, planning and policy documents
- Heads of law enforcement agencies
- Research reports
- Heads of forensic laboratories
- Supreme and appeal court judges, researchers
- Policymakers

## 7 PARTNERSHIPS AND COORDINATION

- 7.1 THE CRIMINAL JUSTICE SYSTEM
  - Cooperative agreements
  - Directors and other personnel in law enforcement agencies
  - Contracts
  - Directors and other personnel in forensic laboratories
  - Project plans
  - Individuals responsible for crime scene investigations
  - Project reports
  - Prosecutors, appeal and supreme court judges

TOPIC	SOURCES	CONTACTS	COMPLETED
7.2 THE SCIENTIFIC COMMUNITY	<ul style="list-style-type: none"> <li>• Cooperative agreements</li> <li>• Contracts</li> <li>• Project plans</li> <li>• Project reports</li> </ul>	<ul style="list-style-type: none"> <li>• Directors of forensic laboratories</li> <li>• Individuals responsible for crime scene investigations</li> <li>• Directors of research institutes outside the criminal justice system</li> <li>• Directors of other laboratories (health, food, pharmaceutical control, etc.)</li> </ul>	
7.3 DONOR COORDINATION	<ul style="list-style-type: none"> <li>• Internet websites</li> <li>• Programme and project documents</li> <li>• Project terms of reference</li> <li>• Regional organization offices</li> <li>• Agreements (e.g., Memoranda of Understanding) with the international community, organization or donor countries (e.g., United Nations, European Commission, OSCE, Interpol, etc)</li> <li>• Embassies</li> <li>• Ministries</li> </ul>	<ul style="list-style-type: none"> <li>• Directors of law enforcement agencies</li> <li>• Directors of forensic laboratories</li> <li>• Individuals responsible for crime scene investigations</li> <li>• Local representatives of international initiatives</li> <li>• Representatives of relevant international or regional organizations working in the country</li> <li>• Embassies/ministries for donor activity</li> <li>• Programme and project managers for international initiatives</li> <li>• Local United Nations representatives</li> </ul>	

## A.3 General institution information

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Name of institution

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Agency affiliation (e.g., Ministry of Justice)

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*Address*

Street .....

Postal code .....

City .....

Country .....

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Telephone number	Fax number
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General e-mail address

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*Head of the laboratory*

Name .....

Telephone number .....

E-mail address .....

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Name and location of subsidiary laboratory(ies), if any

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Name, position and contact details of main contact for questions related to the assessment (if different from head of laboratory):

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## A.4 Scope of services

<i>Discipline</i>	<i>Sub-discipline</i>
Drugs and precursors <input type="checkbox"/>	Seized materials <input type="checkbox"/> Biological specimens (toxicology) <input type="checkbox"/> Other(s) <input type="checkbox"/> , specify
Fingerprints <input type="checkbox"/>	Detection and enhancement <input type="checkbox"/> Comparisons <input type="checkbox"/> Other(s) <input type="checkbox"/> , specify
Shoemarks and tyre marks <input type="checkbox"/>	Shoemarks <input type="checkbox"/> Tyre marks <input type="checkbox"/> Other(s) <input type="checkbox"/> , specify
Biological material and DNA <input type="checkbox"/>	
Questioned documents <input type="checkbox"/>	Documents <input type="checkbox"/> Handwriting <input type="checkbox"/> Other(s) <input type="checkbox"/> , specify
Firearms and toolmarks <input type="checkbox"/>	Gun shot residues <input type="checkbox"/> Ammunition components <input type="checkbox"/> Tool marks <input type="checkbox"/> Serial number restoration <input type="checkbox"/> Other(s) <input type="checkbox"/> , specify
Fire debris and explosives <input type="checkbox"/>	Flammables/Combustibles <input type="checkbox"/> Explosives <input type="checkbox"/>
Trace materials <input type="checkbox"/>	Fibres <input type="checkbox"/> Hairs <input type="checkbox"/> Paint <input type="checkbox"/> Glass <input type="checkbox"/> Other(s) <input type="checkbox"/> , specify
Forensic medicine <input type="checkbox"/>	Pathology <input type="checkbox"/> Odontology <input type="checkbox"/> Anthropology <input type="checkbox"/> Other(s)* <input type="checkbox"/> , specify
Digital and multimedia evidence <input type="checkbox"/>	Computer forensics <input type="checkbox"/> Forensic audio <input type="checkbox"/> Video and image analysis <input type="checkbox"/>
Crime scene investigation <input type="checkbox"/>	Specify the types of cases
Other(s) <input type="checkbox"/>	Specify

\*For example, clinical forensic medicine; histology; photography; toxicology.

## A.5 Available laboratory procedures and equipment

[A table listing commonly used techniques in the various forensic disciplines is found in Annex D]

<b>Forensic discipline</b>		<b>Available techniques</b> (e.g., microscope, colour test, balance, SEM, GC-MS, FT-IR, UV-VIS, LC/MS, etc.). <i>Note the number of instruments for each technique as appropriate.</i>
Drugs and precursors	Seized materials Biological specimens (toxicology)	
Fingerprints		
Shoe and tyre marks	Shoemarks Tyre marks	
Biological material, including DNA		
Questioned document	Documents Handwriting Other	
Firearms and toolmarks	Gun shot residues Ammunition components Tool marks Serial number restoration Other	
Fire and explosion	Flammables/combustibles Explosives	
Fibres, paints, glass and other micro traces	Fibres Hairs Paint Glass Other(s)	
Forensic-medical expertise	Pathology Odontology Anthropology Other(s)	
Digital and multimedia evidence	Computer forensics Forensic audio Video and image analysis	
Crime scene investigation		
Other(s)		

## A.6 Caseload statistics for the last full calendar year

<i>Forensic discipline</i>		<i>Annual number of cases submitted<sup>1</sup></i>	<i>Annual number of samples submitted<sup>2</sup></i>	<i>Number of analysts per discipline<sup>3</sup> [Full time equivalents]</i>	<i>Turn around time<sup>4</sup> [Average in days]</i>
Drugs and precursors	Seized materials				
	Biological specimens (toxicology)				
Fingerprints					
Shoe and tyre marks	Shoemarks				
	Tyre marks				
Biological material, including DNA					
Questioned document	Documents				
	Handwriting				
	Other				
Firearms and toolmarks	Gunshot residues				
	Ammunition components				
	Tool marks				
	Serial number restoration				
Fire and explosion	Flammables/combustibles				
	Explosives				
Fibres, paints, glass and other micro traces	Fibres				
	Hairs				
	Paint				
	Glass				
	Other				

<i>Forensic discipline</i>		<i>Annual number of cases submitted<sup>1</sup></i>	<i>Annual number of samples submitted<sup>2</sup></i>	<i>Number of analysts per discipline<sup>3</sup> [Full time equivalents]</i>	<i>Turn around time<sup>4</sup> [Average in days]</i>
Forensic-medical expertise	Pathology				
	Odontology				
	Anthropology				
	Clinical forensic medicine				
	Histology				
	Other				
Digital and multi-media evidence	Computer forensics				
	Forensic audio				
	Video and image analysis				
Crime scene					
Other					

<sup>1</sup>A case (judicial entity) is defined as a request from the customer that may include forensic investigations in one or several forensic disciplines.

<sup>2</sup>One case may include several exhibits, samples, etc. So, the number in this column is a multiple of the number in the first column.

<sup>3</sup>Provide full time equivalent positions based on the amount of time an analyst/expert spends in each discipline. For example, if one expert works ½ time in a discipline and another works full time in the same discipline, then together they provide 1.5 full time equivalent positions in that discipline.

<sup>4</sup>The average number of days a case remains in the laboratory before being reported.





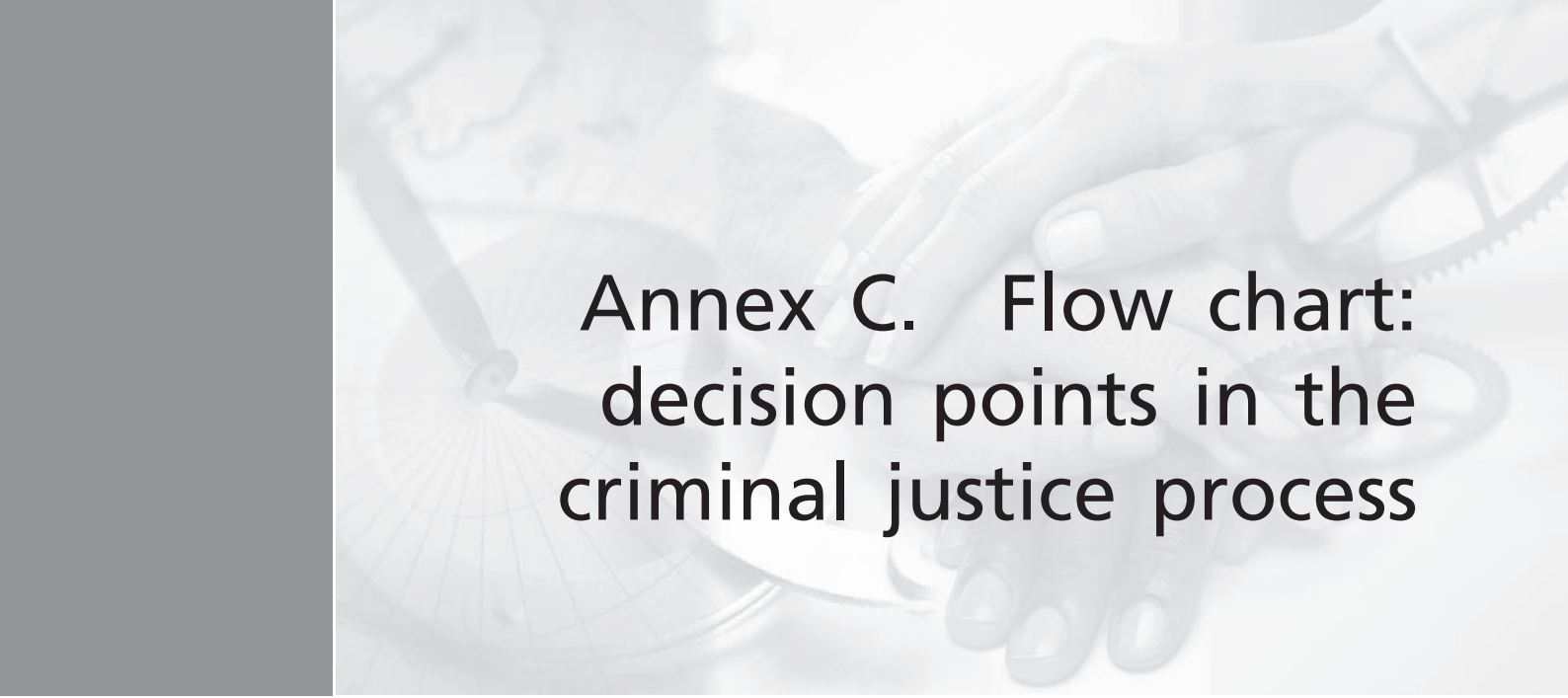
# Annex B. Glossary

## Glossary of terms used in the Criminal Justice Assessment Tool “Forensic services and infrastructure”.

Accreditation	Accreditation aims at establishing the status, legitimacy or appropriateness of a service provider by an independent body (often called a national accreditation body); <i>in a forensic context</i> , typically refers to the official assessment of a forensic science laboratory or forensic service provider, based on internationally accepted standards, such as ISO 17025, 17020. [See also certification.]
Analysis and examination	Analysis of samples aims at determining its composition; <i>in a forensic context</i> , usually a chemical analysis. Examination of samples refers to non-chemical analysis, e.g., observation, comparison.
Caseload	Number of cases submitted, investigated, examined or analysed by a laboratory or forensic service provider in a given time period.
Casework	Investigation of criminal cases or evidence resulting from an investigation; the process of case analysis and examination in a laboratory.
Certification	A procedure by which a competent independent body (certifying body) evaluates and gives formal recognition either to an individual or organization as meeting predetermined requirements or criteria; <i>in this context</i> the term typically refers to a formal recognition of the competence of a forensic expert. [See also accreditation.]
Certified reference materials (CRM)	[See reference materials.]
Chain of custody	Procedures and documents that account for the integrity of physical evidence by tracking its handling and storage from its point of collection to its final disposition. Other terms used: chain of evidence, traceability.

Collaborative exercise	An exercise, where tests are carried out on the same or similar items or materials by two or more different laboratories in accordance with predetermined conditions. The main purpose is validation of analytical methods or establishment of reference methods.
Competence	A demonstrated ability to perform a task to a specific, predetermined standard.
Contamination	The direct or indirect transfer of extraneous material to a forensic sample or scene of crime; Other term used: cross contamination.
Crime scene and crime scene investigation	A site containing records of past activities, alleged to be a crime. <ul style="list-style-type: none"> <li>• Crime scene investigation is a process that aims at recording the scene as it is first encountered and recognizing and collecting all relevant physical evidence</li> </ul> Other term used: crime scene examination. <ul style="list-style-type: none"> <li>• Crime scene investigation service is a dedicated team or organizational unit consisting of crime scene investigators whose main function is to process crime scenes.</li> <li>• Crime scene investigator is an individual with the professional knowledge and skills (who received adequate forensic training) to perform crime scene investigation.</li> </ul> Other term used: crime scene examiner.
Crime scene investigation kit	A specially prepared collection of supplies contained in some carry-all, needed to preserve, document, collect and package physical evidence at crime scenes. Contents of kits vary but typically include containers to gather evidence, labels, gloves, measuring devices and hand tools to help in the recognition and collection of evidence, such as light sources.
Database	<i>In a forensic context</i> , searchable collection of data or information, usually but not necessarily, in an electronic/digital format, e.g., Automated Fingerprints Integrated System (AFIS), Combined DNA Index System (CODIS), Integrated Ballistics Identification System (IBIS). [See also reference collection.]
First responder	First person arriving at a crime scene, e.g., law enforcement officer, fire personnel, emergency medical personnel.
Fingerprint	A mark left on a surface that was touched by an individual. Other term used: fingermark. Also used for the fingerprint ink exemplar taken from an individual for comparison purposes.
Field detection test kit	A specially prepared kit for performing preliminary tests on samples outside of laboratory facilities, e.g., for field testing drugs and precursors.
Forensic service provider	A public or private agency/institution/institute/laboratory performing forensic analyses and examinations, including crime scene investigations and forensic medical examinations, and preparing reports used by the criminal justice system.

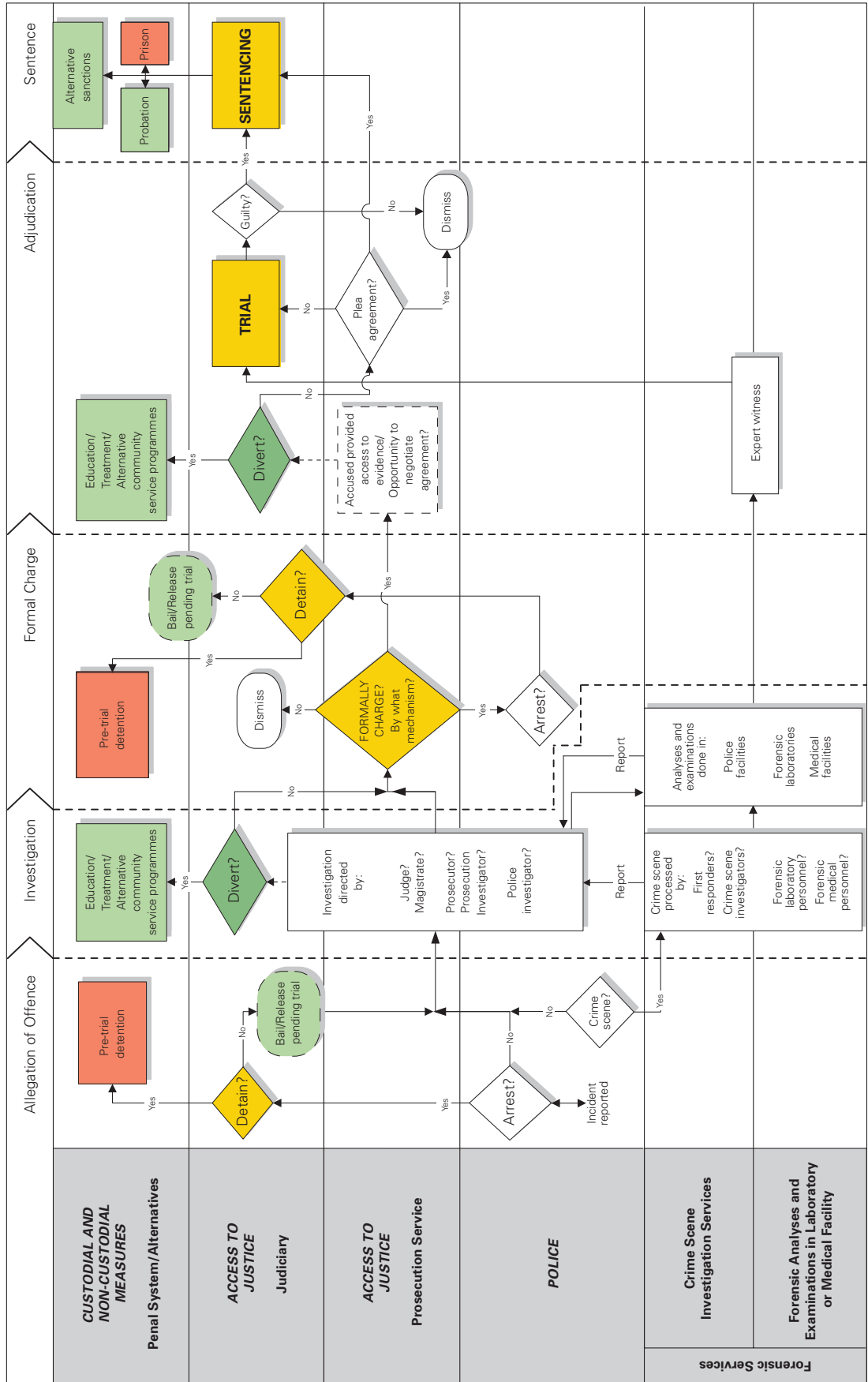
Physical evidence	Any tangible item associated with a crime.
Proficiency test	Test to evaluate the competence of analysts and the quality of performance of a laboratory; in open tests, the analysts are aware that they are being tested; in blind tests, they are not aware.
Quality assurance	All planned and systematic activities implemented within the quality management system to provide adequate confidence that the laboratory will fulfil requirements for quality.
Quality management system (QMS)	The QMS consists of documentation of a laboratory's policies, systems, procedures and instructions to the extent necessary to assure the quality of its results, to meet relevant jurisdictional, regulatory and safety requirements and to satisfy the needs of the clients.
Reference collection	A set of samples and objects used in forensic casework for identification and comparison purposes (e.g., firearms and ammunition; genuine banknotes; ID documents; glass particles; shoe soles; drug packaging; inks). <i>[See also databases.]</i>
Reference material, certified reference material (CRM)	Materials or substances, one or more properties of which are sufficiently well established to be used for the calibration of an apparatus, the assessment of a measurement method, or for assigning values to materials. They can be <i>certified reference materials</i> obtained from a recognized standards authority or <i>in-house reference materials</i> whose composition has been established by the laboratory, for example by a reference method or in collaboration with other laboratories. Reference materials and certified reference materials play a central role in forensic analysis and examinations and should have relevant certificates of authenticity.
Traceability	<i>[See chain of custody.]</i>
Validation	Process of testing and/or demonstrating the applicability of a technique, method, or instrument for a defined measurement, analysis or examination.



# Annex C. Flow chart: decision points in the criminal justice process

Continued on opposite page.

**DECISION POINTS IN THE CRIMINAL JUSTICE PROCESS**





# Annex D. Routinely used forensic techniques

Continued on opposite page.











# Annex E. Overview of forensic associations and international players

There are several regional and international forensic associations and networks with various goals and objectives, as well as international organizations working with forensic service providers. An overview of these bodies is presented below in alphabetical order.

## Regional forensic associations and networks

- American Academy of Forensic Sciences (AAFS), [www.aafs.org](http://www.aafs.org)
- Academia Iberoamericana de Criminalística y Estudios Forenses (AICEF), [www.aicef.net](http://www.aicef.net)
- American Society of Crime Laboratory Directors (ASCLD), [www.asclcd.org](http://www.asclcd.org)
- Asian Forensic Sciences Network (AFSN), [www.asianforensic.net](http://www.asianforensic.net)
- European Council of Legal Medicine (ECLM), [www.irm.unizh.ch/eclm/index.php](http://www.irm.unizh.ch/eclm/index.php)
- European Network of Forensic Science Institutes (ENFSI), [www.enfsi.eu](http://www.enfsi.eu)
- Indo-Pacific Association of Law, Medicine and Science (INPALMS), <http://inpalms.tripod.com/>
- International Association of Forensic Science (IAFS), [www.iafs2005.com/](http://www.iafs2005.com/)
- International Academy of Legal Medicine (IALM), [www.irm.unizh.ch/ialm/index.php](http://www.irm.unizh.ch/ialm/index.php)
- International Committee of the Red Cross (ICRC), [www.icrc.org](http://www.icrc.org)
- International Forensic Strategic Alliance (IFSA), [www.enfsi.eu/page.php?uid=8](http://www.enfsi.eu/page.php?uid=8)
- International Criminal Police Organization (INTERPOL), [www.interpol.int/Public/Forensic/Default.asp](http://www.interpol.int/Public/Forensic/Default.asp)
- Mediterranean Association of Forensic Sciences (MAFS), [www.mafs2009.com](http://www.mafs2009.com)
- National Association of Medical Examiners (NAME), <http://thename.org/index>
- Senior Managers Australian and New Zealand Forensic Laboratories (SMANZFL), [www.nifs.com.au](http://www.nifs.com.au) and [www.nifs.com.au/SMANZFL/SMANZFL.html?index.asp&1](http://www.nifs.com.au/SMANZFL/SMANZFL.html?index.asp&1)
- The International Forensic Summit (TIFS), [www.theforensicsummit.org](http://www.theforensicsummit.org)
- United Nations Office on Drugs and Crime (UNODC), [www.unodc.org](http://www.unodc.org) and [www.unodc.org/unodc/en/scientists/laboratory-and-forensic-science-services.html](http://www.unodc.org/unodc/en/scientists/laboratory-and-forensic-science-services.html)

### AAFS

The American Academy of Forensic Sciences (AAFS) is an association of practitioners of forensic science in a broad sense. It defines itself “a professional society dedicated to the application of science to the law”. Its main activities are:

- To publish the Journal of Forensic Sciences and newsletters;
- To organize an annual scientific meeting, seminars and meetings;
- To initiate actions and reactions to various issues of concern;
- To represent its members to the public and serve as the focal point for public information concerning the forensic science profession.

AAFS was founded in 1948 and it currently has over 6000 members, from the United States and Canada as well as from 55 other countries. The AAFS has 10 sections structured on the basis of forensic expertise fields and related forensic disciplines. Each year (usually in February) a large scientific congress is organized in the United States.

## **AFSN**

The Asian Forensic Sciences Network (AFSN) is the association of forensic science institutes in Asia. The network was inaugurated in November 2009, and currently includes institutes from South-East<sup>6</sup> and East Asian countries, namely Brunei Darussalam, Indonesia, Lao PDR, Malaysia, Philippines, PR China, Republic of Korea, Singapore, Thailand and Viet Nam, with the aim of further expansion over time.

The purpose of AFSN is formulated as follows:

- To provide a forum for forensic science institutes in Asia for discussion on issues relating to forensic services.
- To enhance the quality of forensic services in Asia through expert working groups, training, collaborative studies, proficiency tests and accreditation.
- To establish links with other similar networks for the promotion and advancement of forensic science.
- To formulate strategies relating to forensic science issues in Asia.

Membership is open for directors (or a representative appointed by the director) of forensic institutes in Asia that have a credible status (i.e. institutes that are regular suppliers of reports used by police forces, prosecutors or judges) in their own country. The forensic institute can be one that covers multiple forensic disciplines or a specialist institution offering forensic service in selected disciplines.

## **AICEF**

Academia Iberoamericana de Criminalística y estudios forenses (AICEF) is the association of the forensic laboratories from countries with Spanish or Portuguese as the main language. The majority of its members are located in Latin America, but membership also extends to laboratories in Portugal and Spain. The managerial support from Spain is substantial.

AICEF accepts as a member any official, public forensic laboratory of the Iberoamerican region (Latin America plus Portugal and Spain), i.e. laboratories used by the Police, Ministry of Justice, Attorney General Office, Supreme Court, or independent but public forensic facilities. AICEF also considers forensic laboratories used by public universities.

The main aim of AICEF is to extend and facilitate cooperation and training in the different forensic areas, to increase the quality of criminalistics throughout Latin America and in cooperation with other international networks through IFSA. AICEF works through Working Groups set up for the different forensic specialties.

<sup>6</sup>Specifically, member countries of the Association of Southeast Asian Nations (ASEAN).

## **ASCLD**

The mission of the American Society of Crime Laboratory Directors (ASCLD) is "Excellence Through Leadership in Forensic Science Management" and its aims are formulated as:

- To serve the common professional interests of its members;
- To promote and foster the development of crime laboratory management principles and techniques;
- To acquire, preserve and disseminate information related to the utilization of crime laboratories;
- To maintain and improve communications among crime laboratory directors;
- To promote, encourage and maintain the highest standards of practice in the field of crime laboratory services;
- To promote an increase in the effective utilization of crime laboratory services;
- To strive for the suitable and proper accomplishment of any purpose herein set forth or any objective of a professional association.

Membership is not only open to directors of laboratories, but also for individual scientists and students. Memberships is also open to scientists from outside the United States. Each year a large scientific congress is organized in the United States.

## **ECLM**

The European Council of Legal Medicine (ECLM) represents the European forensic medical practitioners who are involved in the investigations of non-natural causes of death. The focus is not only the scientific aspects, but also on the recognition of the profession by the European Union and the Council of Europe.

## **ENFSI**

The European Network of Forensic Science Institutes (ENFSI) is the leading organisation for forensic institutes in Europe. ENFSI is recognized as a pre-eminent voice in forensic science worldwide by "ensuring the quality of development and delivery of forensic science throughout Europe".

Exchange of scientific expertise and experience takes place within the 16 ENFSI Working Groups. The main activities of the Working Groups are the publishing of Best Practice Manuals, organizing of seminars and workshops, and organizing proficiency tests and collaborative exercises. As a result of these activities the scientists in a particular expertise field have close contact with each other.

ENFSI organizes an open, triennial scientific congress under the name European Academy of Forensic Science (EAFS). The objective of these conferences is to enhance the contacts of ENFSI and the relevant scientists outside the ENFSI community.

## **IAI**

The International Association for Identification (IAI) is the world's oldest and largest forensic science/identification association, with more than 7,000 members from the United States and over 50 countries. The advancement of forensic disciplines through education continues to be one of IAI's top priorities.

The IAI now has seven Certification Programmes including Crime Scene Certification, Forensic Art, Footwear and Tiretrack Analysis, Bloodstain Pattern Analysis, Forensic Photography/Imaging, Tenprint Fingerprint Certification, and Latent Print. The IAI publishes the Journal of Forensic Identification (JFI), an internationally recognized bimonthly scientific journal provided to all IAI members. The JFI includes articles by international authorities on original investigations, experiments, testing, and reviews in all branches of forensic identification. The IAI also has an annual International Educational Conference, presented at a different location each year.

## IAFS

The International Association of Forensic Science (IAFS) was established in 1957. Its main objective is organizing a triennial scientific congress. The IAFS is directed by a Council composed from the previous chairmen. There is no membership in IAFS similar to that of the aforementioned organizations.

## IALM

The International Academy of Legal Medicine (IALM)—the former International Academy of Legal and Social Medicine—was established in 1938. As indicated by its name, it focusses on the medical aspects of forensic science. Its aims are “the furthering of scientific progress in the field of Legal Medicine, especially promoting collaboration and information exchange among specialists on an international level, by holding scientific meetings and congresses, and through scientific publications” and “to collaborate with other scientific societies and endeavor to provide as required the information and expertise to answer public inquiries related to the discipline of Legal Medicine”.

## ICRC

The International Committee of the Red Cross (ICRC) is an impartial, neutral and independent organization whose exclusively humanitarian mission is to protect the lives and dignity of victims of war and internal violence and to provide them with assistance. It directs and coordinates the international relief activities in situations of conflict. It also endeavours to prevent suffering by promoting and strengthening humanitarian law and universal humanitarian principles.

Soon after the *International Conference of Governmental and Non-Governmental Experts on the Missing and their Families*, held in Geneva, Switzerland, in 2003, the ICRC established its own forensic services. Their goal is to help the ICRC promote the implementation of recommendations from this Conference which are related to the management of human remains and information on the dead in armed conflicts and other situations of armed violence, to help ensure the right of families of the missing to know the fate of their loved ones, to recover and to mourn their remains. The recommendations have also proved valuable for the management of the dead in catastrophes. The ICRC is the only humanitarian organization which offers forensic services, including advice, training and support, exclusively for humanitarian purposes.

## IFSA

IFSA stands for the International Forensic Strategic Alliance. IFSA is a partnership between the regional networks of operational forensic laboratories including:

- American Society of Crime Laboratory Directors (ASCLD)
- European Network of Forensic Science Institutes (ENFSI)

- Senior Managers of Australian and New Zealand Forensic Laboratories (SMANZFL)
- Academia Iberoamericana de Criminalística y Estudios Forenses (AICEF)

These autonomous networks represent forensic science laboratory management for their specific regions. They have similar roles, functions and objectives and recognize the value to be gained through long-term collaboration and cooperation on strategic issues related to the management of forensic science laboratories and the promotion of forensic science. It is recognized that IFSA has no legal status but represents a cooperative entity comprising the member networks.

#### Goals and objectives

- To represent the operational forensic science community;
- To develop and execute a rolling agenda for strategic issues related to forensic science;
- To be a strategic partner to other relevant international organisations and partnerships;
- To encourage the exchange of information related to experience, knowledge and skills between the member networks.

### **INPALMS**

The Indo-Pacific Association of Law, Medicine and Science (INPALMS) was established in 1986. It is an association of individual forensic physicians, pathologists as well as national forensic and medico-legal organizations, with focus on forensic medical disciplines. INPALMS organizes a triennial scientific congress and offers, in conjunction with the Victorian Institute of Forensic Medicine (VIFM), a scholarship for those wishing to undertake postgraduate studies in forensic medicine.

### **INTERPOL**

Interpol (founded in 1923) is the largest international cooperation of national police forces in the world (184 member-states). The secretariat is located in Lyon (France). There are regional centres and liaison officers in almost every country. The main task of Interpol is to facilitate the international police cooperation and to support all organizations which are combating cross-border criminality.

One of the main responsibilities of Interpol is submitting operational information e.g., from databases containing fingerprints, DNA-profiles, stolen works of art, etc. to police forces.

The interest by Interpol in forensic science is reflected by the triennial Interpol International Forensic Science Symposium in Lyon (IFSS). Overviews of the state of art of the forensic disciplines are presented and current topics are discussed. All (detailed) documents can be downloaded from the internet. Interpol is active in promoting the application of DNA-technology in the combat against criminality. A special Interpol DNA Unit has been established with the goal of providing strategic and technical support to enhance member states' DNA profiling capacity and promote widespread use in the international law enforcement environment. The Interpol DNA Unit organizes expert meetings, works on establishing and extending a DNA databank, and has published a DNA handbook.

## MAFS

The Mediterranean Association of Forensic Sciences (MAFS) is focusing on the laboratories in the countries located round the Mediterranean Sea. Its aims are:

- To develop forensic sciences;
- To exchange scientific knowledge and technical experience in this field;
- To organize scientific meetings, workshops and training courses;
- To create conviviality and friendship between persons interested in forensic sciences.

## NAME

The National Association of Medical Examiners (NAME) is the national professional organization of physician medical examiners, medical death investigators and death investigation system administrators who perform the official duties of the medico-legal investigation of deaths of public interest. NAME was founded in 1966 with the dual purposes of fostering the professional growth of physician death investigators and disseminating the professional and technical information vital to the continuing improvement of the medical investigation of violent, suspicious and unusual deaths.

## SMANZFL

The Senior Managers of Australian and New Zealand Forensic Laboratories (SMANZFL) represents the key forensic science service providers for New Zealand and the eight States and Territories in Australia. Two representatives are elected from each of these jurisdictions to form the SMANZFL Committee and eight representatives from the Committee are elected to the SMANZFL Executive. The Director of the National Institute of Forensic Science (NIFS) serves as an ex-officio member of the Executive.

The mission of SMANZFL is “to provide leadership in the forensic sciences in the pursuit of excellence”. Concrete objectives following this mission are:

- To provide leadership and best management practice in the forensic sciences;
- To promote interaction and cooperation with stakeholders;
- To promote science excellence;
- To contribute to police issues in the justice system;
- To promote confidence in the forensic science;
- To promote efficient and effective use of resources.

## TIFS

The International Forensic Summit (TIFS) is a global partnership between multiple regional forensic science networks representing a broad range of forensic groups; e.g., science, medicine, patterned evidence, and crime scenes. The groups participating include not only directors of forensic institutes, but learned societies representing practitioners at all levels, educational groups, and key enabling bodies. The organization has a true global perspective and is attempting to link organizations from that global perspective. This website provides information about TIFS and its objectives. The website also provides a mechanism for TIFS participants to collaborate and share information via its registered users area.

Led by a Steering Committee, TIFS is working to provide the framework to enable participating forensic organizations to coordinate, cooperate and collaborate on matters of international importance. TIFS is the mechanism by which the forensic sciences (including both science and medicine) become a united front to guide the global development of the profession. TIFS also supports forensic science in emerging nations.

TIFS has been established to promote information sharing on a global scale; to identify forensic science issues and promote solutions to those issues; and to serve as subject matter experts on global forensic science issues.

### **UNODC**

The United Nations Office on Drugs and Crime (UNODC) through its Laboratory and Scientific Section works with nations to improve their scientific and forensic capacity and capabilities to meet internationally accepted standards; ensure the worldwide availability and accessibility of such standards; and increase the use of forensic science services, data and information for evidence-based operational purposes, strategic interventions and policy and decision-making.

UNODC also facilitates international forensic cooperation, including through the formation of and support to new associations and networks.







# UNODC

United Nations Office on Drugs and Crime

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