Forensic Requirements for Accreditation

FRAG-3: Guidance Document on Scopes of Accreditation

REVISION LOG.

Version	Issued	Changes
2006/1	June 26, 2006	First issue of document
2008/1	January 24, 2008	Delete FQS-I address and phone numbers from cover sheet

1. Introduction

The aims of scopes of accreditation are primarily:

1) To define the areas of testing for a laboratory which are formally recognized by an accreditation body; and
2) To provide the users of laboratories with an appropriate description of the specific tests for which an accreditation body has recognized their competence.

The purpose of this document is to assist laboratories in developing a proposed scope of accreditation to provide with their application for accreditation, and encourage a measure of consistency in the scopes of accreditation for laboratories accredited by FQS-I.

2. References

ILAC-G18: 2002. The Scope of Accreditation and Consideration of Methods and Criteria for the Assessment of the Scope in Testing.

ILAC-G19: 2002. Guidelines for Forensic Science Laboratories.

3. General Considerations

FQS-I intends scopes of accreditation to reflect a reasonable balance between the levels of detail needed by a laboratory's customers and flexibility on the part of accredited laboratories to offer their services within appropriate scopes of their recognized competence.

Too much detail may result in unnecessary and numerous demands for changes in scopes of accreditation. Laboratories should be able to modify generic methods or implement new methods in response to technological progress or the changing needs of customers, provided that such changes do not involve significant deviation from accredited scopes.

The Field of Testing for which FQS-I accredits laboratories is "Forensic Testing". Because forensic testing involves the examination of a wide range of items and substances, FQS-I recognizes that flexibility is needed when creating scopes of accreditation.

4. Scopes of Accreditation

Each scope of accreditation is generally defined by (1) categories and (2) sub-categories of materials and/or activities; and (3) analytical techniques applied in each sub-category. Lists of commonly recognized forensic categories, sub-categories/activities, and analytical techniques are given below. These are not meant to be exhaustive lists, and the numbering system for analytical techniques is not fixed. (See ILAC G19:2002 section 1.1 for additional examples pertinent to "traditional" forensic analysis).

A sample scope of accreditation is provided. This model is most applicable for agencies whose forensic testing activities fall within "traditional" forensic science. Scopes of accreditation for

other types of agencies might be better defined in terms of materials or items tested, measurement principles (types of tests), and specific test methods or techniques.

In all cases, an agency's "scope of accreditation" will be finalized in consultation with the lead assessor and the FQS-I Manager of Accreditations.

Materials Tested

Category	Sub-Category/Activity
Controlled Substances	• Controlled pharmaceuticals and illicit drugs • Related chemicals and paraphernalia • Botanical material
Trace Chemistry-Flammables	• Recovery • Identification

Toxicology	• Pharmaceuticals and poisons in human biological specimens
	• Alcohol
	• Animal drug testing
	  o Horse
	  o Dog

Biology	• Biological screening (body fluid id)
	• DNA analysis in forensic casework
	• DNA analysis for databasing
	  o CODIS
	  o Other
	• Paternity/Familial relationships

Latent Prints	• Development
	• Comparison
	• Database
	  o AFIS
	  o Other

Questioned Documents	• Handwriting comparisons • Other questioned documents

Firearms	• Weapons
	• Ammunition
	• Toolmarks
	• Gunshot residue
	• Distance determination
	• Database
	  o NIBIN
	  o Other
	• Serial number restoration

Category	Sub-Category/Activity

Trace materials	• Chemistry
	  o Plastics and polymers
	  o Adhesives
	  o Paint
	• Hairs and fibers
	  o Fibers
	  o Hairs
	• Miscellaneous
	  o Glass
	  o Light filaments
	  o Soils
	  o Shoeprint/tire tread*
	  o (Other)

Scene Investigation	• Crime scene investigation • Blood spatter pattern interpretation • Fire investigation
Digital & Multimedia Evidence	• Computer forensics • Forensic audio • Image analysis • Video analysis

*shoeprint and/or tire tread analysis may be associated in some laboratories with a category other than Trace Materials

Analytical Techniques

1.0 Chemical Screening Tests 1.1 Immunoassay 1.2 Color 1.3 Microchemical
2.0 Genetic Analysis 2.1 DNA-PCR 2.1.1 Autosomal STR 2.1.2 Y STR 2.1.3 Mitochondrial 2.1.4 (Other) 2.2 DNA-RFLP 2.3 Non-DNA marker analysis 2.4 Data analysis
3.0 Electrophoresis 3.1 Capillary 3.2 Gel
4.0 Chromatography 4.1 Gas Chromatography 4.2 Liquid Chromatography 4.3 Thin Layer Chromatography

5.0 Spectroscopy 5.1 Infrared, UV, Visible, or Fluorescence 5.2 Mass spectrometry 5.2.1 GC/MS 5.2.2 GC/MS/MS 5.2.3 LC/MS 5.3 Nuclear magnetic resonance spectroscopy 5.4 X-ray 5.5 (other)
6.0 Physical Examination 6.1 Striation comparison 6.2 Physical reconstruction 6.3 Friction ridge analysis 6.4 Pattern comparison, pattern recognition 6.5 Physical measurements (e.g., weight, volume, etc.)
7.0 Microscopy 7.1 Optical 7.2 Electron
8.0 General laboratory procedures

4. Changes to Scopes of Accreditation

Changes to an accredited laboratory's scope of accreditation must be discussed with the FQS-I Manager of Accreditations.

a. **Removal of categories, sub-categories, or analytical techniques.** Accredited laboratories should notify FQS-I whenever changes in their operations result in the discontinuation of testing that is listed on the laboratory's scope of accreditation.

b. **Addition of categories, sub-categories, or analytical techniques.** The addition of new categories, sub-categories, or substantially new analytical techniques (those incorporating measurement principles not covered by the original scope) to a laboratory's scope of accreditation requires the approval of FQS-I. At a minimum the laboratory should be prepared to provide FQS-I with copies of written procedures and validation documentation for review; however, a comprehensive assessment on site at the laboratory may be required.

Sample Scope of Accreditation

XYZ Laboratory
Scope of Accreditation
06-FQS-I-150

Field of Testing: Forensic Testing

Category	Sub Category	Analytical Techniques
Biology	• Biological Screening • DNA in forensic casework • DNA databasing o CODIS	• 1.1, 1.2, 6.1, 8.0 • 2.1.1, 2.1.3, 3.1, 3.2, 8.0 • 2.1.1, 2.2, 3.1, 8.0
Controlled Substances	• Controlled pharmaceuticals and illicit drugs • Related chemicals and paraphernalia • Botanical material	• 1.2, 1.3, 4.0, 5.0, 6.0, 7.0, 8.0 • 1.2, 1.3, 4.0, 5.0, 6.0, 7.0, 8.0 • 1.2, 4.2, 6.0, 7.0, 8.0

Analytical Techniques

1.0 Chemical Screening Tests 1.1 Immunoassay 1.2 Color 1.3 Microchemical
2.0 Genetic Analysis 2.1 DNA-PCR 2.1.1 Autosomal STR 2.1.2 Y STR 2.1.3 Mitochondrial 2.2 Data analysis
3.0 Electrophoresis 3.1 Capillary 3.2 Gel
4.0 Chromatography 4.1 Gas Chromatography 4.2 Thin Layer Chromatography
5.0 Spectroscopy 5.1 Mass spectrometry 5.1.1 GC/MS
6.0 Physical Examination 6.1 Physical measurements (e.g., weight, volume, etc.)
7.0 Microscopy 7.1 Optical
8.0 General laboratory procedures