

Forensic Science Standards: Interpretation and Reporting in Forensic Investigations

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Introduction

General requirements for laboratories are outlined in The International Organization for Standardization (ISO) Standard 17025 and have been adapted for the accreditation of forensic laboratories by the National Association of Testing Authorities (NATA) Australia in their Field Application Document (FAD). These documents leave many forensic processes insufficiently dealt with. To address this situation, the Australia New Zealand Policing Advisory Agency National Institute of Forensic Science (ANZPAA NIFS) helped form a Standards Australia (SA) Forensic Analysis Committee in 2009. Assisted by funding from the Australian Government, the Committee established a project to develop a range of forensic standards for use in Australia. The forensic standards are based on internationally recognised and accepted practices and procedures and will help ensure that the use of forensics is robust, repeatable and consistent across all jurisdictions in Australia.

The framework for the forensic standards development consists of core standards that provide a comprehensive matrix and are applicable to the majority of forensic science disciplines. These core standards for the more universal aspects of forensic science cover collection of forensic material, examination techniques, interpretation of results and reporting findings (See Figure 1). Core standards can then be supplemented by the development of discipline specific forensic science standards or guidelines. One focused, discipline specific standard describing the "Examination of ignitable liquids in fire debris" was published in 2011. Two core standards covering Collection and Analysis were published recently and their formulation is described in an accompanying paper. A discipline specific standard for Minimizing contamination in products used with biological material was also published recently and is described in an accompanying paper. This paper describes the formulation and current status of the remaining two core standards concerned with Interpretation and Reporting in forensic science.

AS 5388 Forensic Analysis Part 3: Interpretation

Much comment was generated at every stage in the drafting of this Standard. Comment was particularly robust around issues concerning the process of assessing the weight of a particular result, finding or opinion.

Public comment on this Standard closed recently and those comments accepted by the Committee were incorporated into a Ballot Draft that is being finalised by its members.

The Standard:

- seeks to define the underpinning principles and requirements for reliable interpretation. It highlights professional judgement, limitations of techniques and the possible influence of context
- distinguishes between the transformation of data and observations into information that may be reported as results and the interpretation of information that may then be reported as opinion. It includes sections on the review of information (results) and the review of opinions
- acknowledges that an approach to interpretation of results using probabilities for evidence given competing hypotheses to obtain a likelihood ratios can be a useful approach, especially where suitable databases exist from which probabilities may be derived
- acknowledges that in many areas of forensic science, a likelihood ratio approach is not used and/or suitable databases do not exist.

The standard therefore attempts to encourage practices which will assist in obtaining reliable results and opinions independent of the approach used to evaluate data/observations or weight a result.

An appendix on error is included for information.

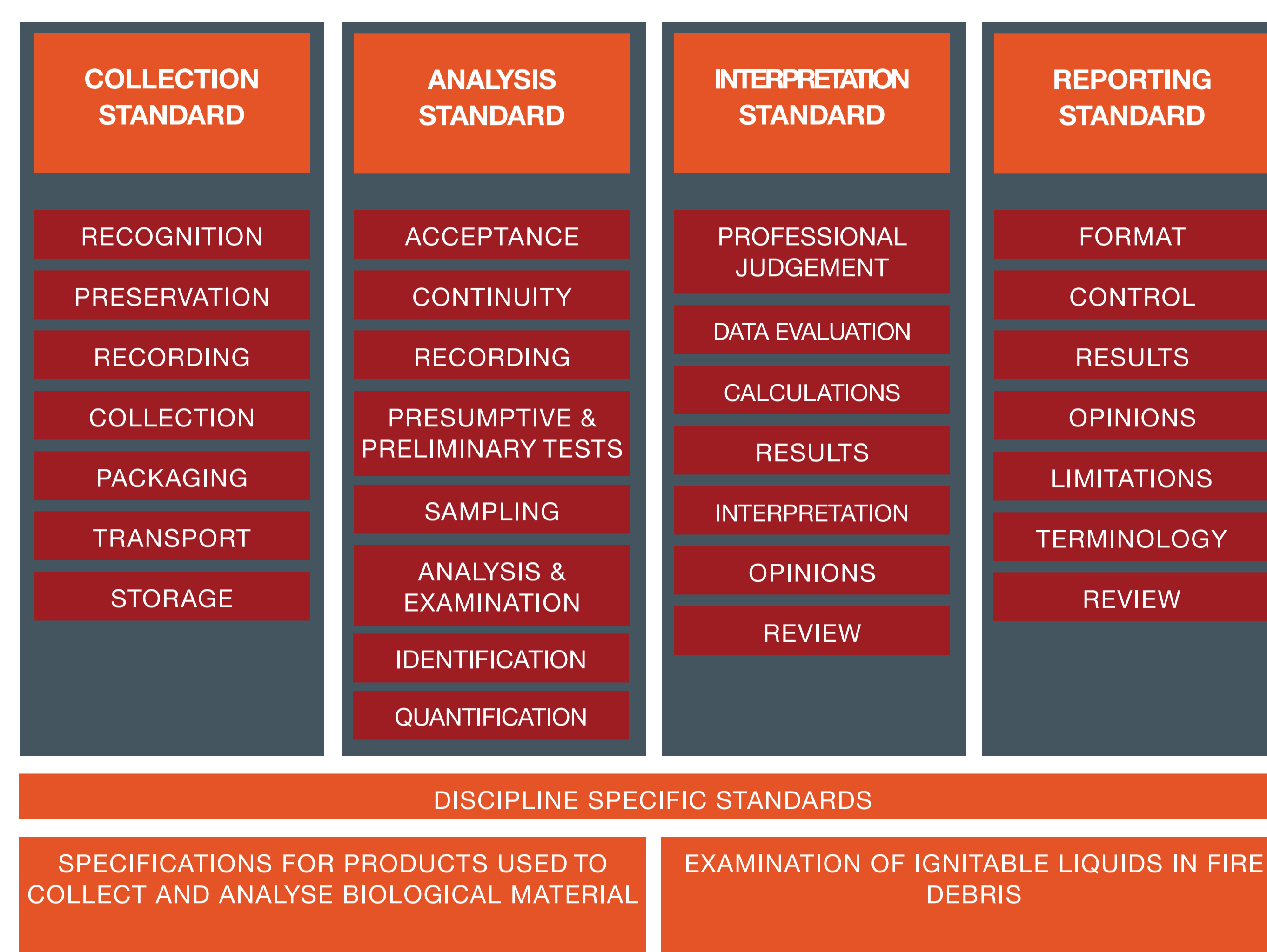


Figure 1. The forensic science development framework in Australia.

Implications

The development of internationally recognised standards will:

- provide consistency and a required level of practice at all stages of forensic work from sample recognition at a scene to reporting evidence in courts of law. This reduces the risk of poor justice outcomes and thereby creates savings to society by reducing the costs of re-trials or other legal processes
- facilitate professional mobility. This has advantages in times when a rapid response is required to scenes of major crimes or mass disasters which may be beyond the means and capabilities of any one laboratory
- benefit smaller specialised service providers and individual practitioners by giving guidance in developing procedures and protocols that will ensure legal acceptability and consumer confidence, without the need for costly accreditation.

The forensic standards being developed in Australia all have the potential for international adoption or may form the basis for the development of international standards.

Further work will, however, be required to formulate guidelines for specific disciplines and to more easily incorporate the new Standard into an assessment and/or accreditation process.

AS 5388 Forensic Analysis Part 4: Reporting

Much comment was also made at Working Draft and Committee Draft stages in the development of the Standard, particularly concerning the nature of facts, results and opinions.

The draft Reporting Standard is currently at the public comment stage.

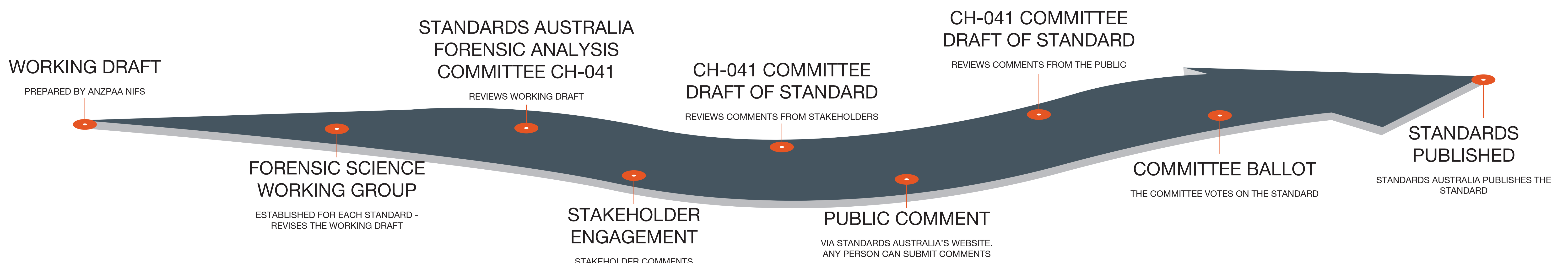
The Standard:

- contains general considerations concerning the scope of reports and report formats
- differentiates between and gives guidance on case file review including:
 - administrative reviews
 - technical reviews.
- considers issues in the issue and control of reports
- gives guidance on report contents
- gives guidance on the reporting of facts and results
- differentiates and gives guidance on the reporting of opinions including terminology use in:
 - investigative opinions
 - evaluative opinions.
- gives guidance on the use of definitive, qualified and inconclusive opinions
- considers evaluative opinion given correspondences between:
 - class characteristics
 - individual characteristics.
- considers report review
- considers testimony review.

Informative appendices on facts, results and opinions, and on report types are included.

Method

The Standards Australia Forensic Analysis Committee (CH-041) was established by Standards Australia in 2009. It comprises representatives from stakeholder organisations; law enforcement, forensic facilities, judicial representatives, educators and testing facilities from around Australia. The key objective of the Committee is to develop forensic science draft standards based on the practices and procedures currently employed in the majority of accredited forensic facilities in Australia and New Zealand and therefore acceptable to the preponderance of those facilities. To this end, the Committee resolves competing interests to maximise consensus and consults with all interested constituencies through an open process to maximise transparency and acceptance.



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