



THE NATIONAL INSTITUTE OF FORENSIC SCIENCE

Dr Linzi Wilson-Wilde OAM

ANZPAA
Australia New Zealand
Policing Advisory Agency



CONTEXT

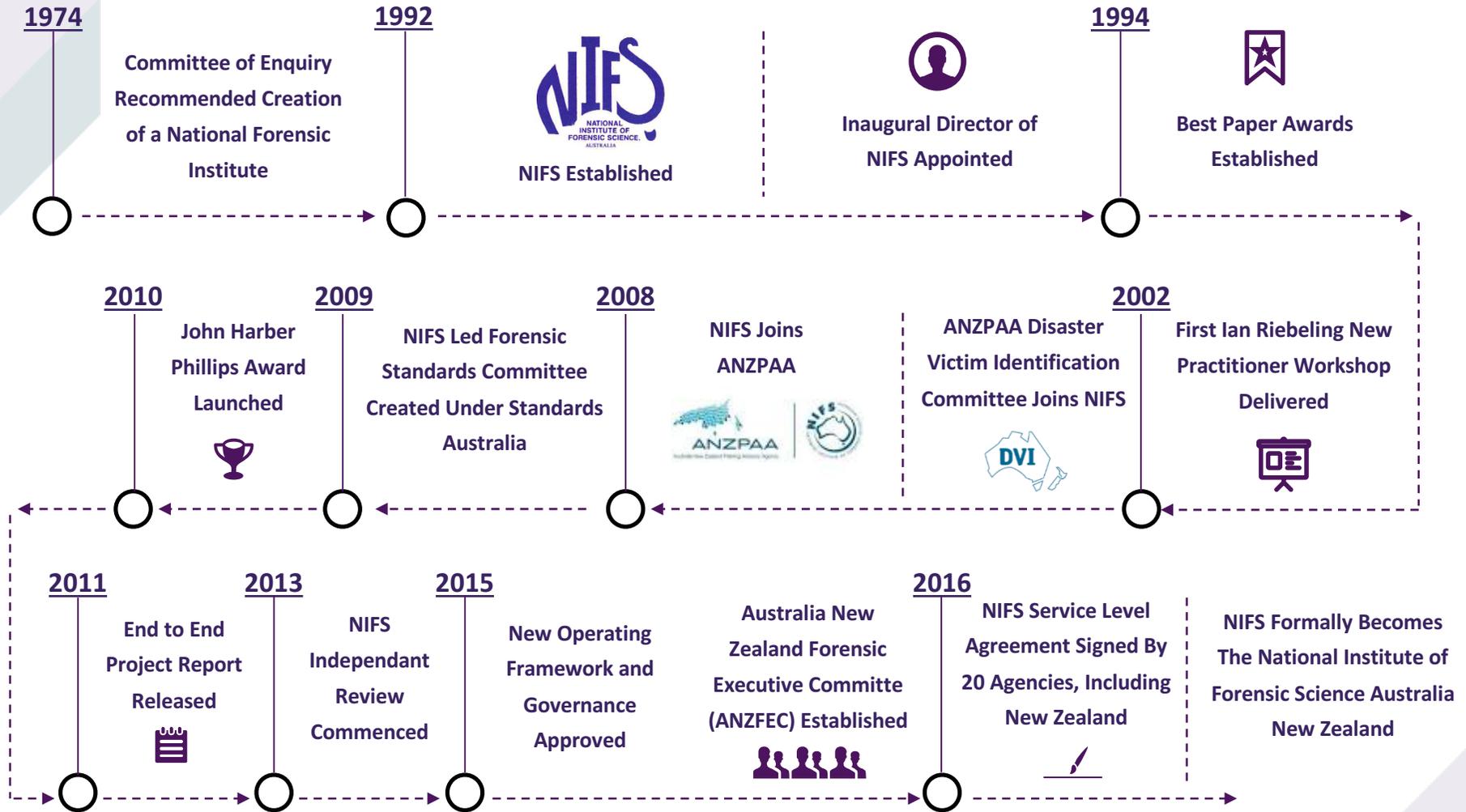
ANZPAA
Australia New Zealand
Policing Advisory Agency



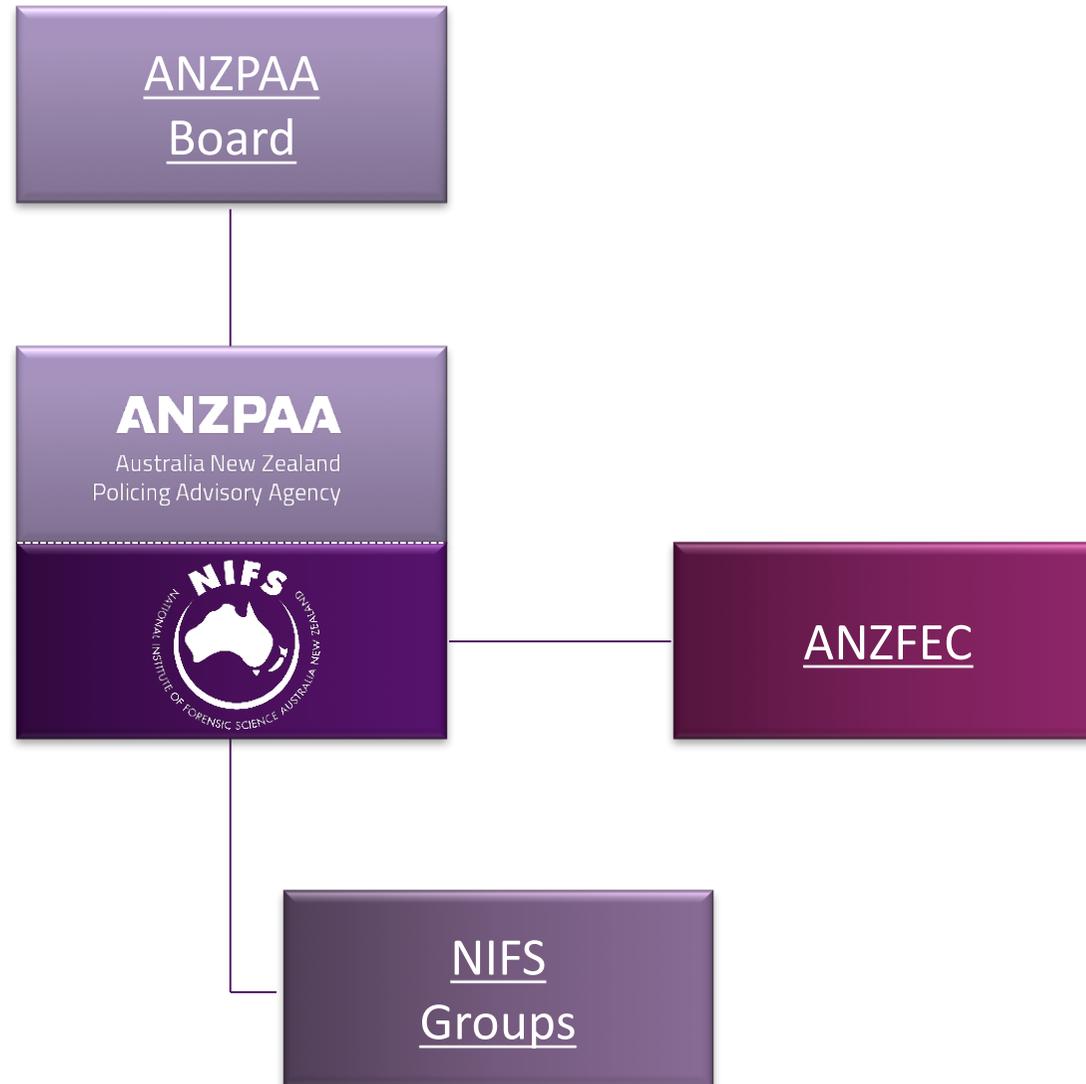
AUSTRALIA



HISTORY OF NIFS



NIFS GOVERNANCE FRAMEWORK



ANZFEC MEMBERS

Each police agency representative endorsed by the Commissioner

The map displays the following member agencies and partners:

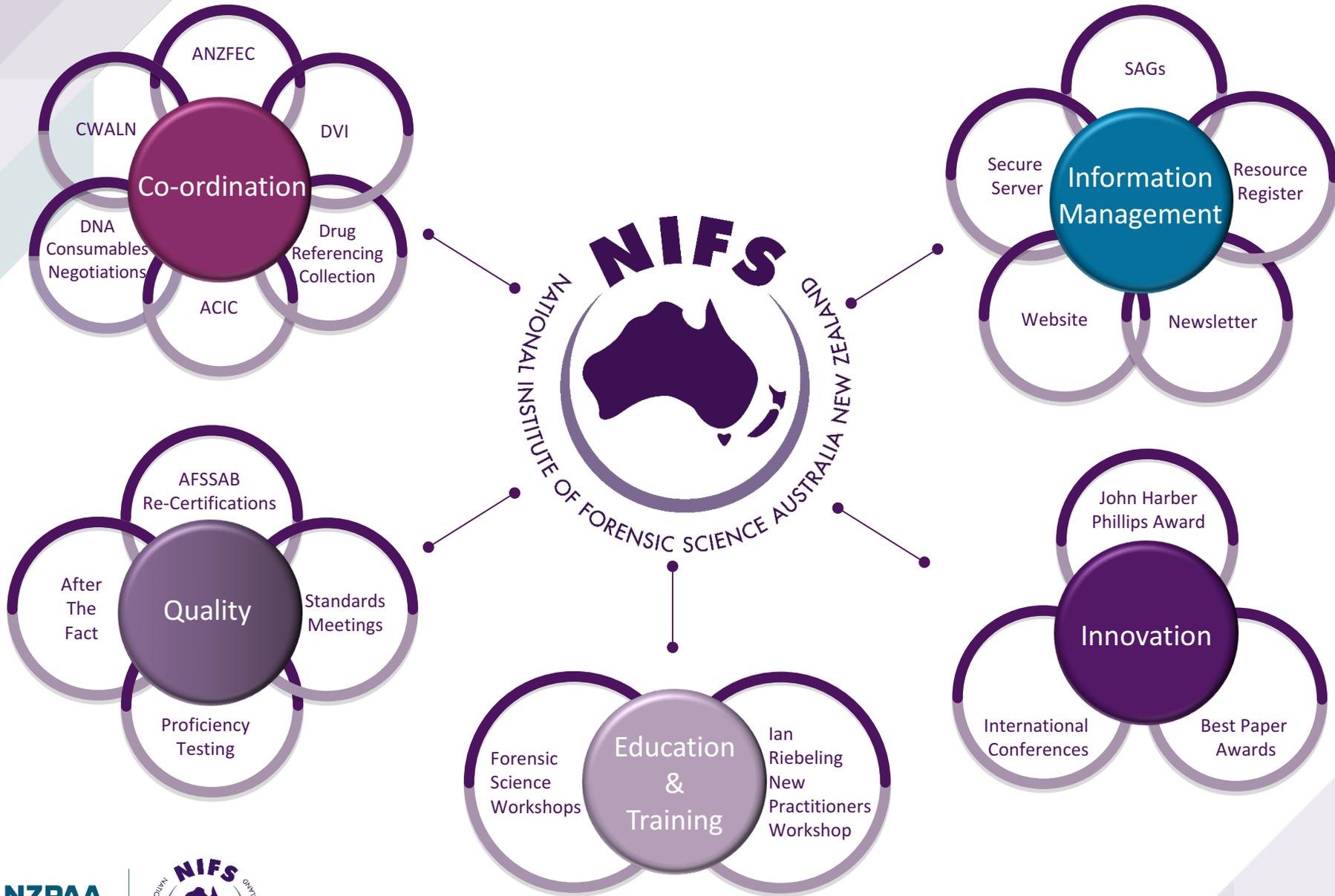
- PathWest** (LABORATORY MEDICINE WA)
- Chem Centre** (EXPERT SOLUTIONS)
- Northern Territory Police**
- Queensland Government**
- Queensland Police**
- NSW Government**
- NSW Health Pathology**
- WA Police**
- South Australia Police**
- Government of South Australia** (Forensic Science SA)
- ACT Government** (Health)
- Australian Government** (Department of Industry, Innovation and Science)
- National Measurement Institute**
- Victoria Police**
- Victorian Institute of Forensic Medicine**
- Tasmania Police**
- Forensic Science Service Tasmania**
- ACT Government** (Health)
- ES/R** (THE SCIENCE BEHIND THE TRUTH)
- New Zealand Police**

2016-2017 WORK PROGRAM

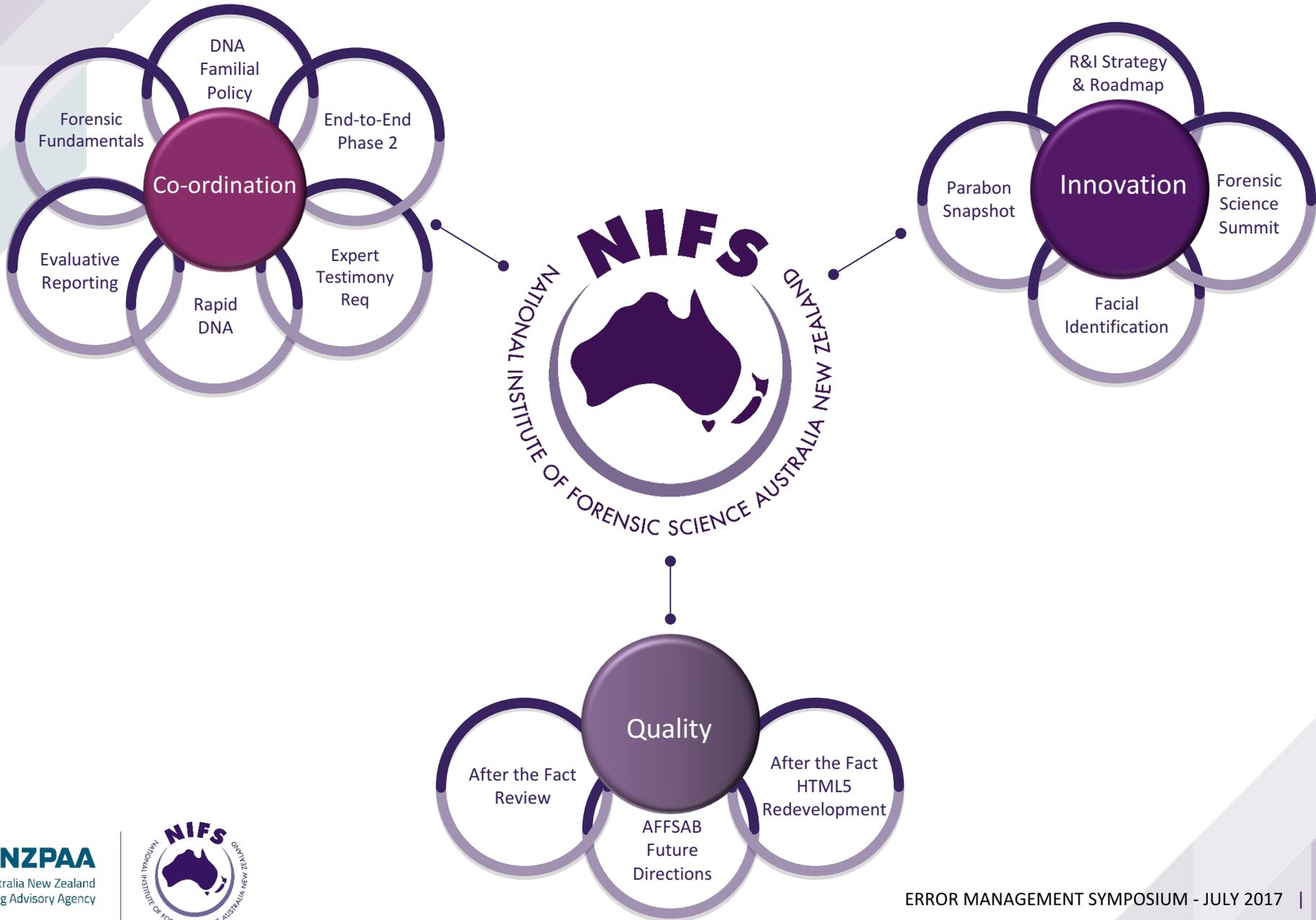
ANZPAA
Australia New Zealand
Policing Advisory Agency



ONGOING ACTIVITIES



PROJECT ACTIVITIES



UNDERSTANDING ERROR

ANZPAA
Australia New Zealand
Policing Advisory Agency



PROFICIENCY TEST ERROR

ANZPAA
Australia New Zealand
Policing Advisory Agency



OVERVIEW OF DATA ANALYSIS



2005 – 2015

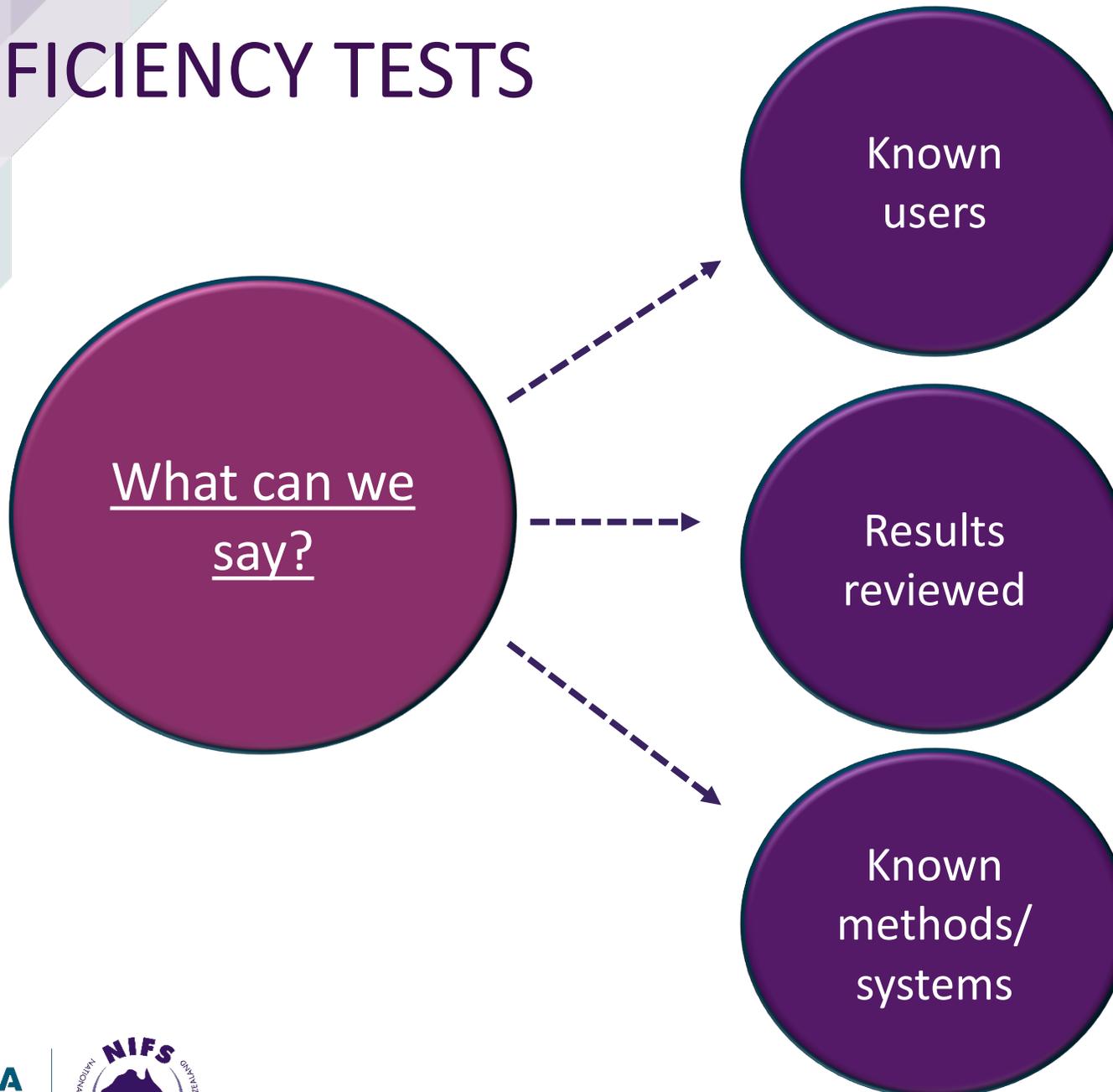


21 Forensic Disciplines



ANZ Data

PROFICIENCY TESTS



PROFICIENCY TESTS

What can it tell us?

Indicative guide to the error rates for the processes under testing

What can't it tell us?

The error rate for a case, method, practitioner, discipline

TEST ANALYSED



Laboratory Analysis

- Blood Alcohol
- Body Fluids
- Breath Alcohol
- DNA Blood
- DNA Mixture
- DNA Semen
- Drug Analysis
- Flammables
- Fibres
- Forensic Biology
- Glass
- GSR Distance
- Paint

Pattern Recognition

- Bloodstain Pattern
- Firearms
- Handwriting
- Imprint Evaluation
- Latent Prints
- Questioned Documents
- Serial Number Restoration
- Toolmarks

DATA



21

Disciplines

2,914

Tests

21,187

Results

CALCULATIONS

Results were grouped under the following categories:

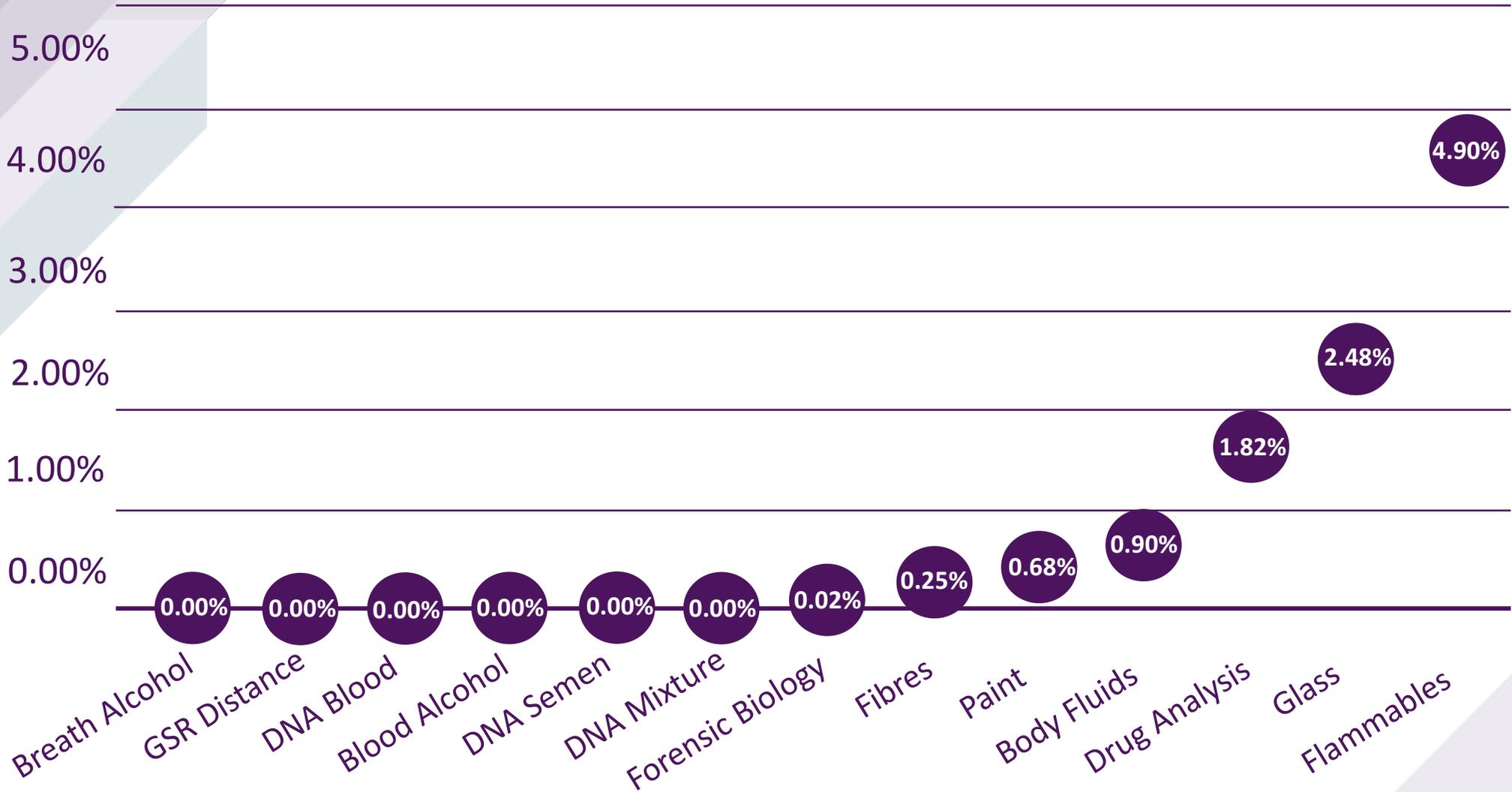
- Transcript Error
- Minor Error
- Major Error Type I
- Major Error Type II
- Inconclusive Marked Wrong
- Inconclusive Marked Right
- Test Issues

Indicative error rate calculation:

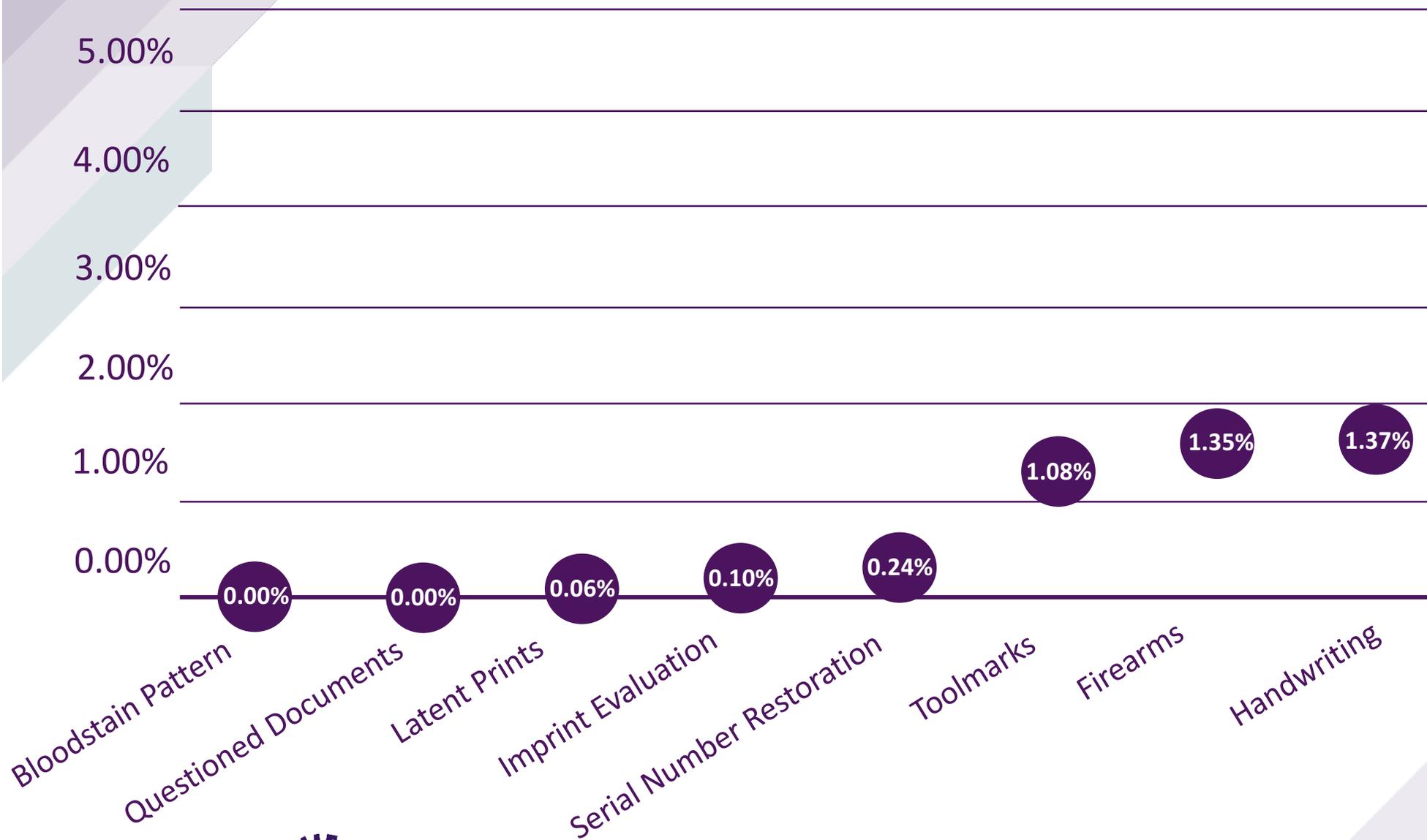
$$\frac{\text{Total Number of Major Errors (Type I \& II)}}{\text{Total Number of Results}^*}$$

*excludes tests ordered but not submitted, tests with design issues etc.

RESULTS – LABORATORY ANALYSIS



RESULTS – PATTERN RECOGNITION



TESTS ORDERED – NOT SUBMITTED

- ▶ However, each year there are a number of proficiency tests that are ordered by agencies but not submitted for marking
- ▶ The estimated financial cost (\$AUD) of these tests for the period 2005 – 2015 was: ~\$78,000

3,176

Total Number of Tests
Ordered

262

Total Number of Tests
Not Submitted

8.2%

%
Not Submitted



TESTS ORDERED – NOT SUBMITTED

| Area | Discipline | Not Submitted | Total Tests Ordered | % of Total Tests Ordered | Total Cost (\$USD) |
|---------------------|---------------------------|---------------|---------------------|--------------------------|--------------------|
| Pattern Recognition | Bloodstain Pattern | 32 | 181 | 17.68% | \$ 9,920.00 |
| | Serial Number Restoration | 10 | 79 | 12.66% | \$ 2,100.00 |
| | Imprint Evaluation | 15 | 146 | 10.27% | \$ 3,600.00 |
| | Latent Prints | 30 | 297 | 10.10% | \$ 11,100.00 |
| | Toolmarks | 11 | 124 | 8.87% | \$ 2,310.00 |
| | Questioned Documents | 4 | 68 | 5.88% | \$ 680.00 |
| | Firearms | 3 | 126 | 2.38% | \$ 540.00 |
| | Handwriting | 1 | 68 | 1.47% | \$ 275.00 |

CONCLUSIONS

- ▶ This study does not replace need for properly designed, blind error rate studies
- ▶ Proficiency test analysis
 - > Reasons for errors found in proficiency tests
 - > Focus blind trials/further study
 - > Monitor trends
- ▶ More attention required to proficiency tests purchased but not completed

AFTER THE FACT

ANZPAA
Australia New Zealand
Policing Advisory Agency



AFTER THE FACT DATA

After the Fact
VIRTUAL FORENSIC ASSESSMENT

Save Test Log Out

General Photos Evidence Statements CCTV Plan

Statements

About 4.30am on Sunday 13th April 2015 police received an emergency call from Security Officer Ronald Agius who was performing security at the University of Western Wilkstown. Mr Agius states that about 4.20am on Sunday morning he was in the security office at the university when he noticed an alarmed fire escape door

Detective Sergeant Julie Clark

Use the space above for notes.
Statement transcripts are NOT available during the assessment.

To zoom, use the Shift and Ctrl keys on your keyboard.

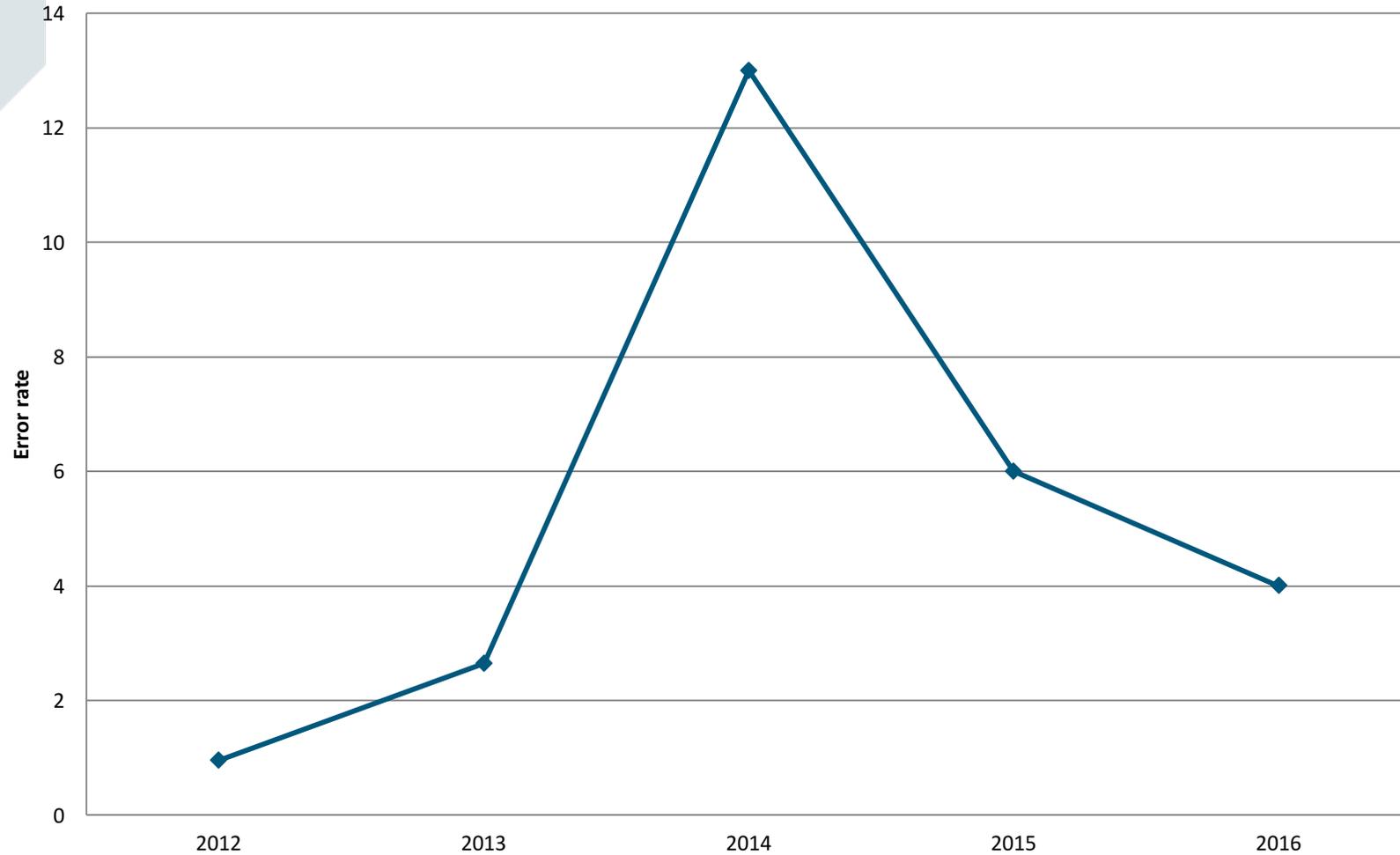
Capture Photo Capture Evidence

V 1. 17.048 20150522

Copyright © 2015

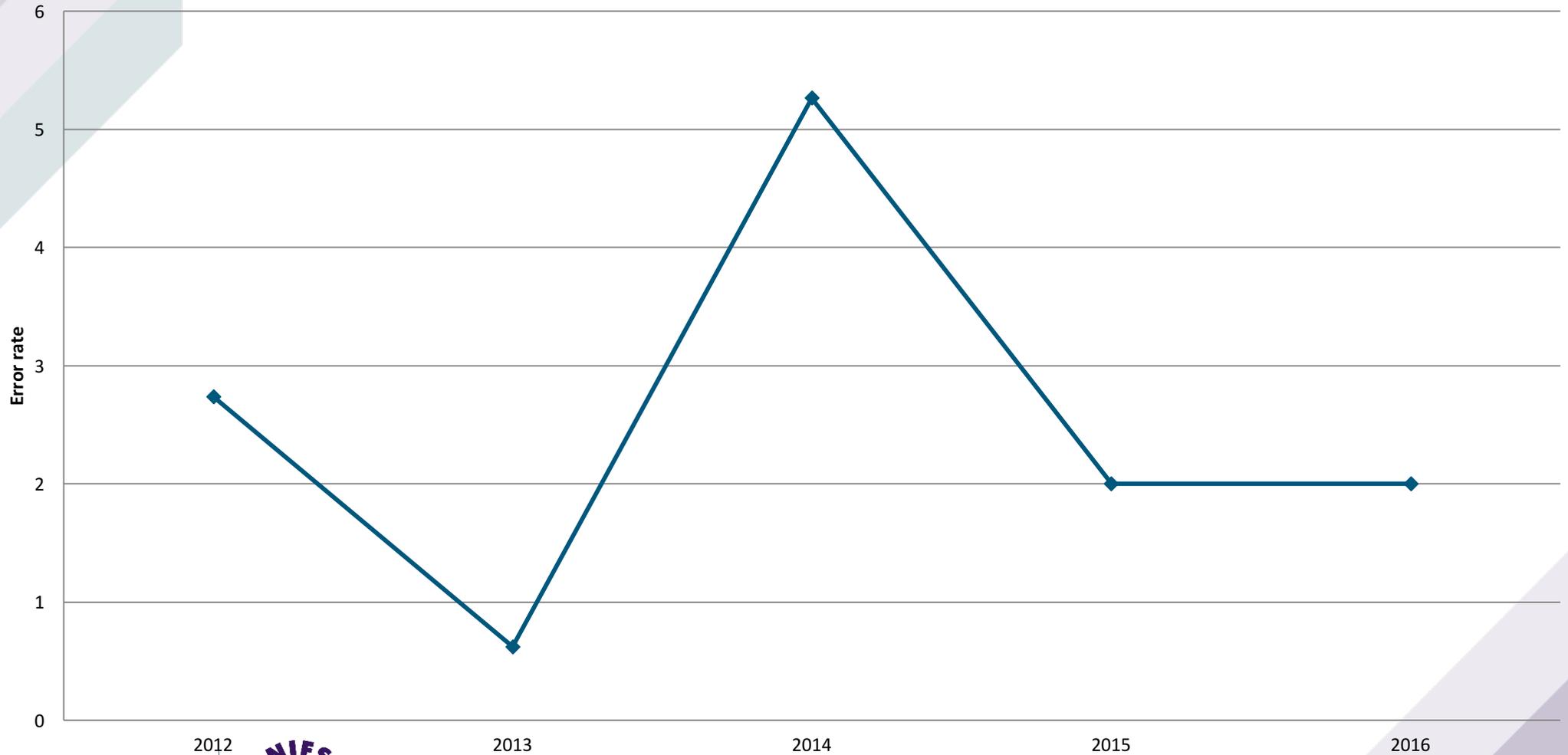
AFTER THE FACT DATA

Error rate per year Volume crime



AFTER THE FACT DATA

Error rate per year Major crime



MINIMISING ERROR

ANZPAA
Australia New Zealand
Policing Advisory Agency





AUSTRALASIAN FORENSIC FIELD SCIENCES ACCREDITATION BOARD

ANZPAA
Australia New Zealand
Policing Advisory Agency





REQUIREMENTS FOR AFFSAB ACCREDITATION

- ▶ Completion of the relevant national training program minimum or equivalent
- ▶ Achievement of AFFSAB assessment requirements.
- ▶ Provision of a supporting statement from supervisor outlining applicants experience, training and competence
- ▶ Recommendation for AFFSAB assessment by the Head of the Forensic Science Service



ANNUAL REACCREDITATION

- ▶ Annual review of competency
- ▶ Based on
 - > Passing a relevant (in area of discipline) proficiency test
 - > Approved by Supervisor and Head of Facility
- ▶ Submissions all crossed checked by AFFSAB

5-YEAR REACCREDITATION

- ▶ More rigorous assessment
- ▶ Demonstrate currency and professional development
- ▶ 100 points of professional development
- ▶ Professional Development Indicators
- ▶ Core day to day discipline duties (casework, tech/admin review etc) – 40 points
- ▶ Professional development (training, mentor, research, policy, conference etc) – 40 points
- ▶ Approved by Supervisor and Head of Facility

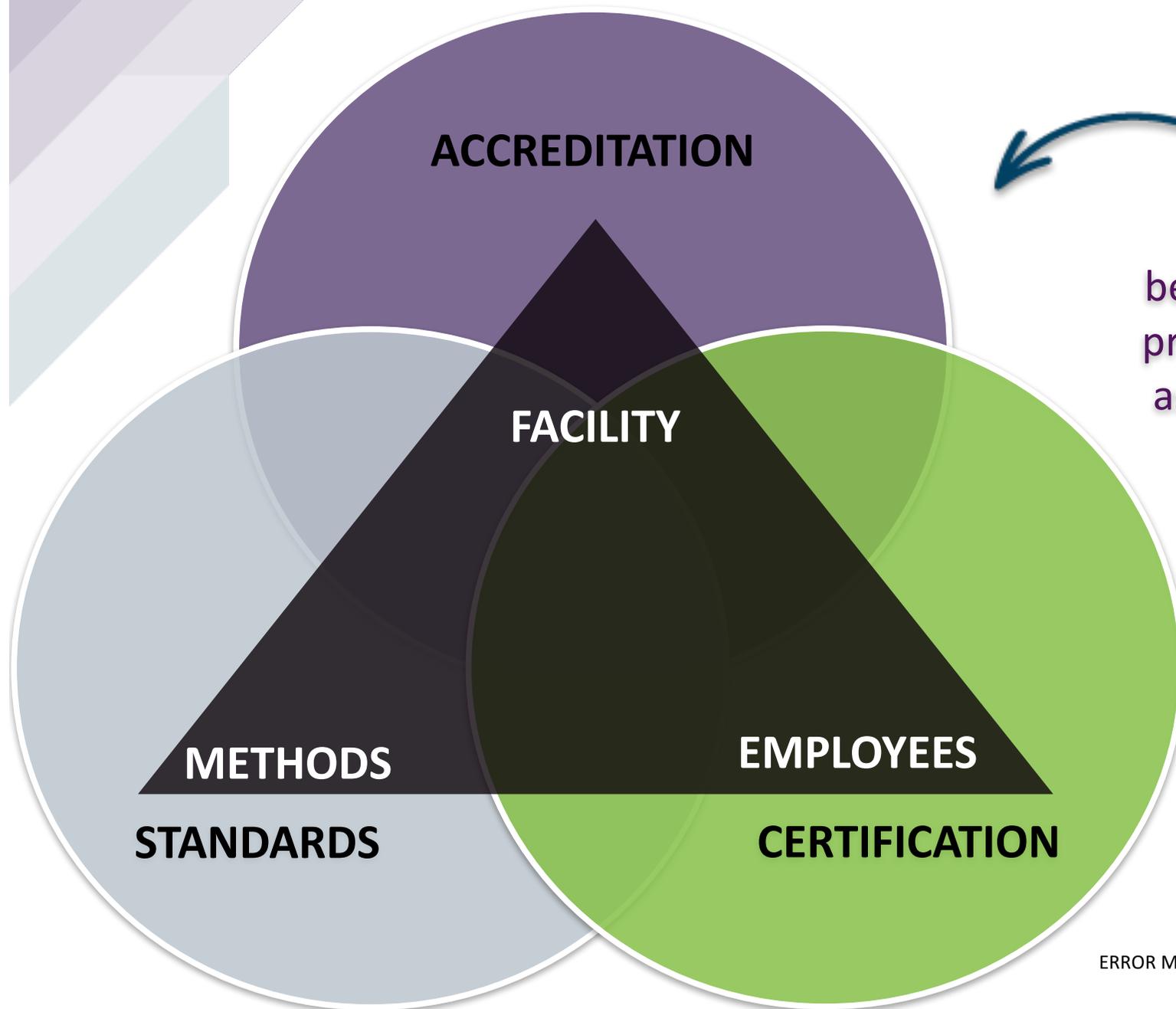
THE ROLE OF STANDARDS

ANZPAA

Australia New Zealand
Policing Advisory Agency



FORENSICS AND THE QA PROCESS



The relationship
between the forensic
processes and quality
assurance processes

FORENSIC SCIENCE STANDARDS GLOBALLY

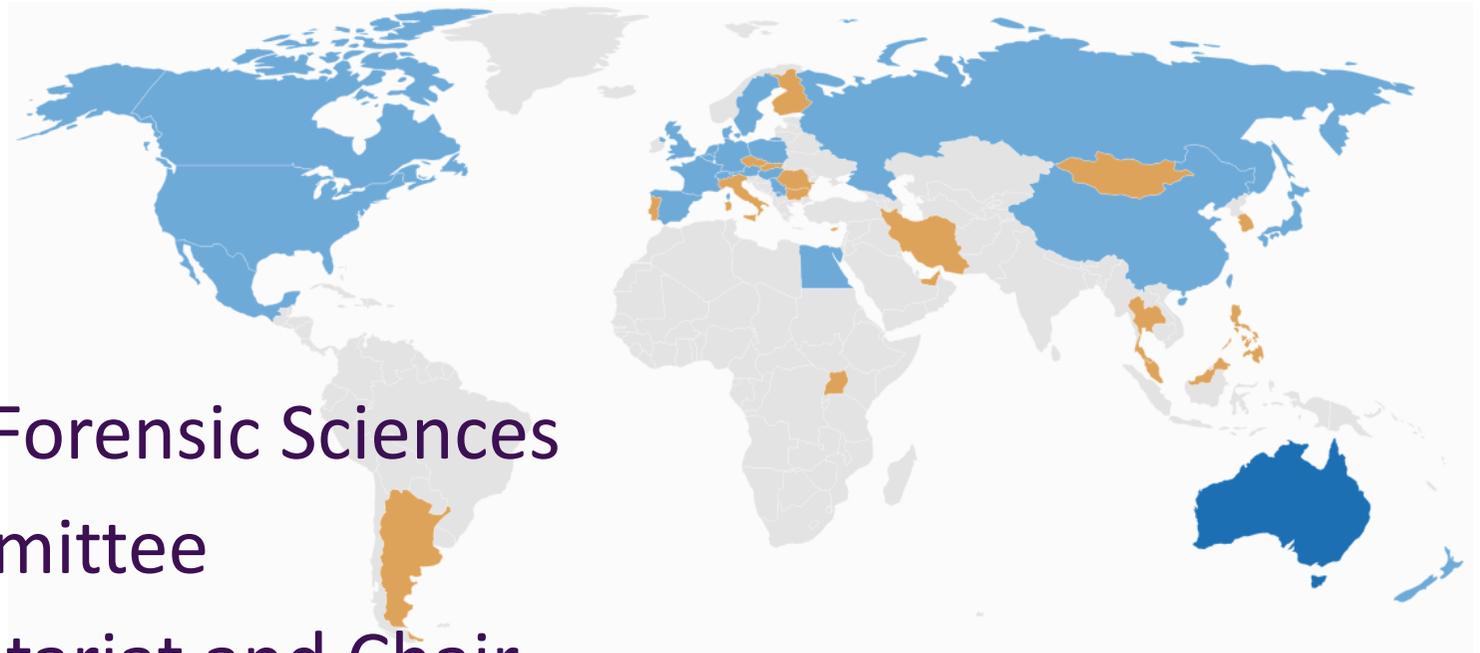


INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)



- ▶ Internationally, accreditation of forensic laboratories is to one of the following two standards:
- *ISO 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.* Organisational level and specifies laboratory management requirements, with an emphasis on policy and documentation. It does not address the requirements for sampling and testing at the crime scene. This standard is currently being reviewed
- *ISO/IEC 17020 – Conformity assessment – Requirements for the operation of various types of bodies performing inspection.* Criteria for inspection bodies in the examination of ‘materials, products, installations, plant, processes, work procedures or services’ to provide certification

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)



- ▶ Title: TC272 – Forensic Sciences
- ▶ Technical Committee
- ▶ Australia Secretariat and Chair
- ▶ 23 participating country members
- ▶ 18 observing country members

TC272 – FORENSIC SCIENCES - SCOPE



- ▶ “Standardization in the field of forensic science.

This includes the products, techniques, methodology and reporting in broad general areas of forensic science such as:

- > Detection, collection and preservation of physical evidence
- > Analysis and interpretation of results and findings.”





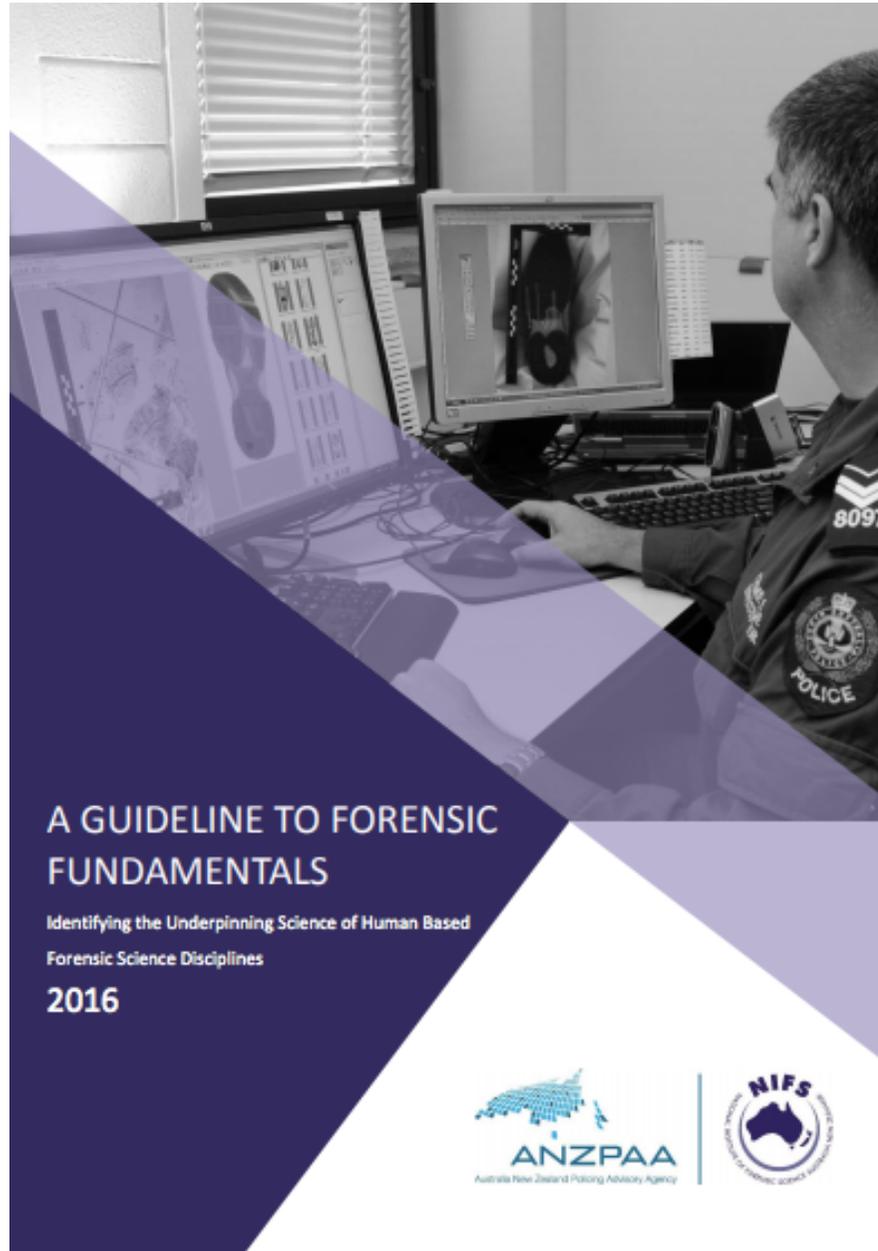
UNDERPINNING SCIENCE

ANZPAA
Australia New Zealand
Policing Advisory Agency





FORENSIC FUNDAMENTALS



A GUIDELINE TO FORENSIC FUNDAMENTALS

Identifying the Underpinning Science of Human Based
Forensic Science Disciplines

2016

ANZPAA
Australia New Zealand
Policing Advisory Agency





NIFS TEAM



Eva



Linzi



Dean

ANZPAA
Australia New Zealand
Policing Advisory Agency



Rob



Ann



Steffany



Steve



WWW.NIFS.ORG.AU

ANZPAA
Australia New Zealand
Policing Advisory Agency

