



The Development of ISO Forensic Science Standards



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March 23, 2019

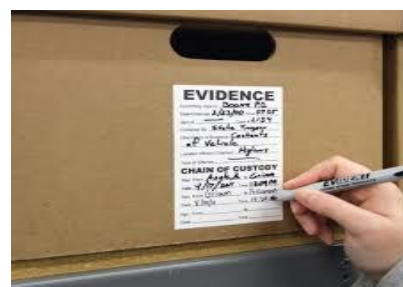
Developing Standards That Reflect Best Forensic Practices Applied World-Wide



As more forensic information is being collected on international databases (fingerprint, DNA, and other biometric databases), the forensic community has recognized the importance of **standardized protocols** to ensure that the data collected is reliable, interpretations are based on comparable technologies and techniques, and findings are accepted by courts of law internationally



Collection



Storage



Analysis



Interpretation

The ISO Technical Committee on Forensic Sciences (TC 272)

- Created in 2012 under the leadership of Standards Australia (SA)
- **Scope:** “Standardization and Guidance in the Field of Forensic Sciences: This includes the development of standards that pertain to laboratory and field-based forensic science techniques and methodology in broad general areas such as collection of physical evidence, the subsequent analysis and interpretation of evidence, and their reporting of results and findings”
- Standards developed by TC 272 are **not** meant to replace competency-based standards ISO/IEC 17025:2017 or ISO/IEC 17020:2017
- As of 2017, TC 272 had 23 participating and 18 observing country members

ISO - Approved TC 272 Scope of Work



Process Point of View

Forensic process generally consists of up to four stages including:

- Detection and collection of material
- Examination and analysis of material
- Interpretation of the results of examination and analysis
- Reporting of the results and conclusions

Generic Requirements

Requirements that must be satisfied in order to preserve the integrity of the evidence.



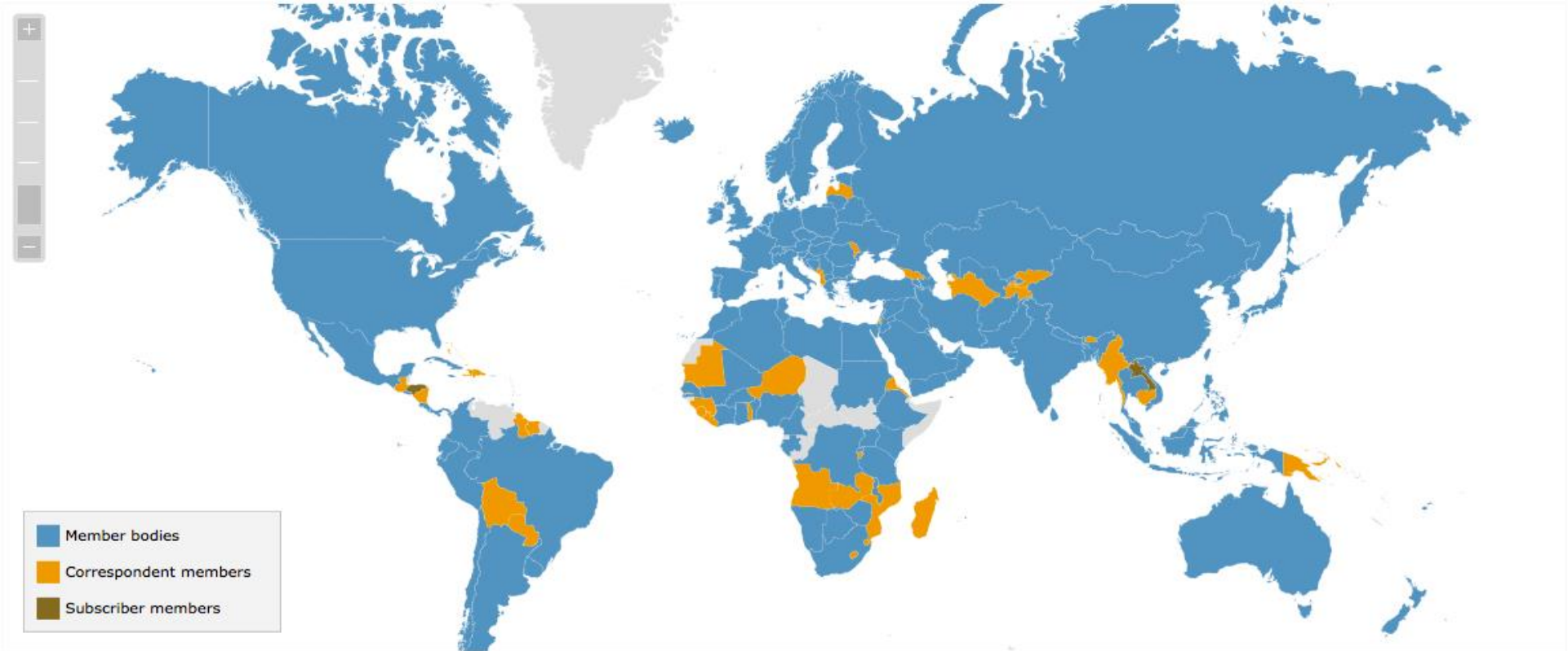
This includes the development of four separate standards that align with this forensic process.

International Organization for Standardization



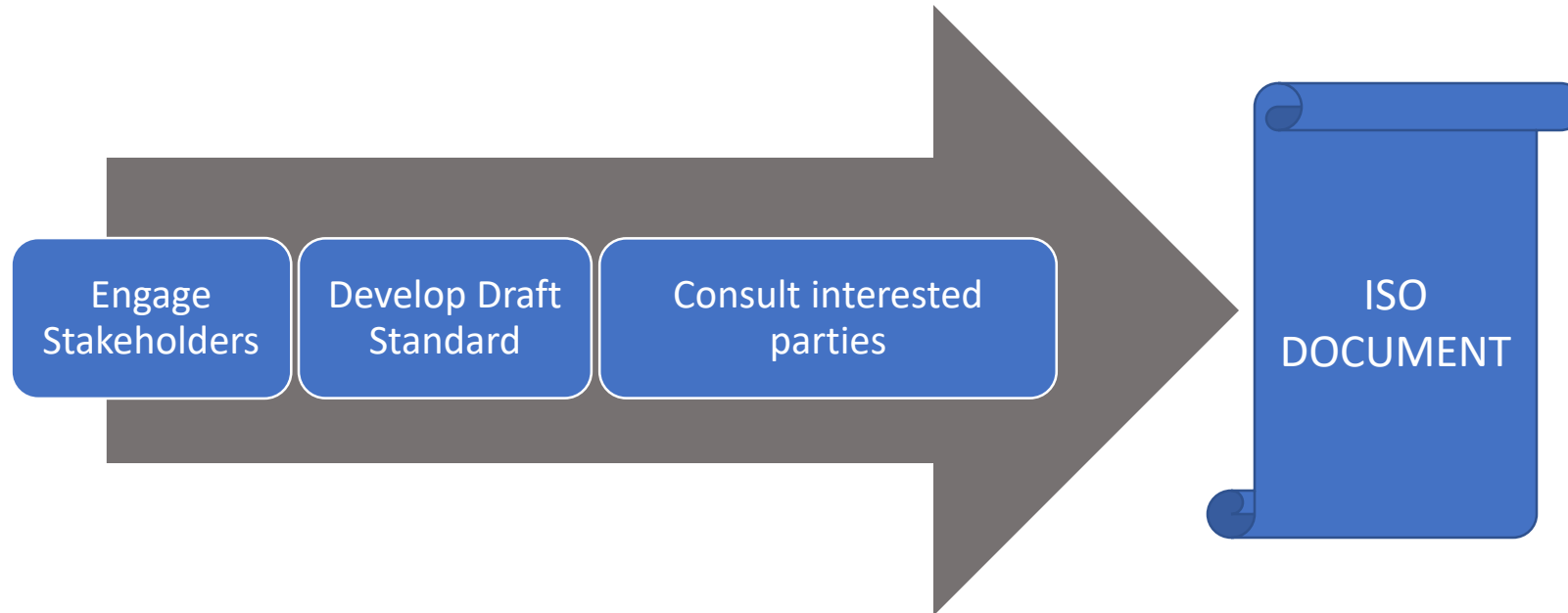
About ISO

ISO is a non-government organization and network of the national standards institutes of countries, **one member per country**, with a Central Secretariat in Geneva, Switzerland, that coordinates the system.



Bring together experts to share knowledge and develop voluntary, consensus-based, market relevant International Standards.

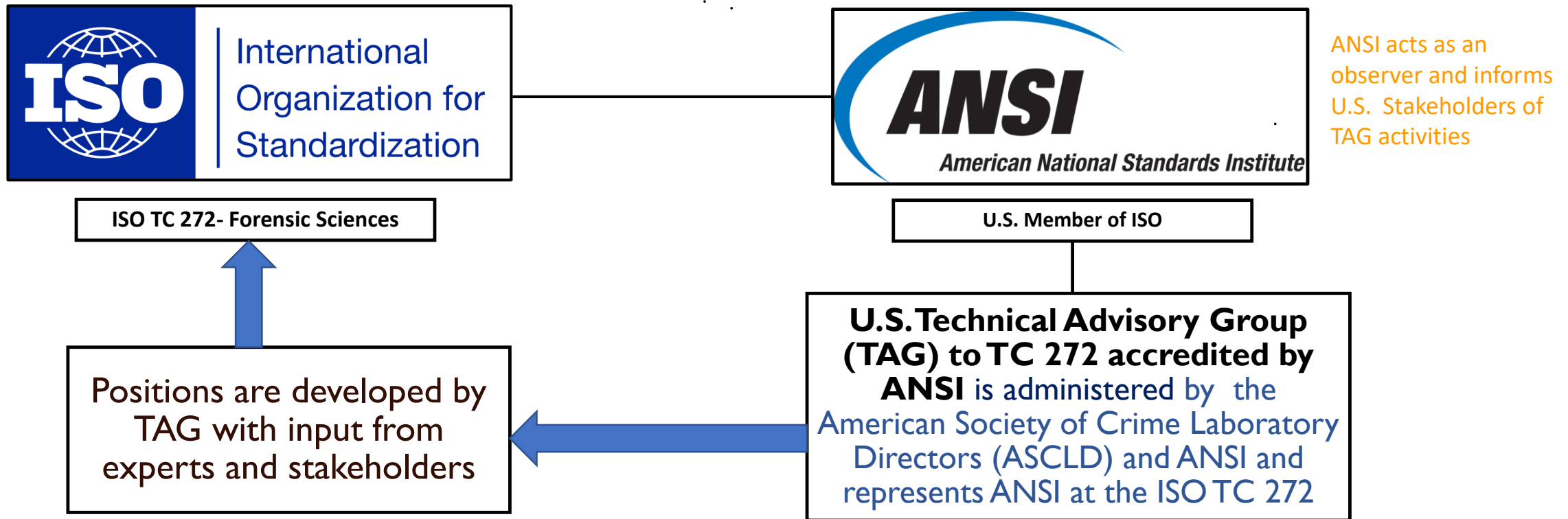
ISO acts as a bridging organization in which a consensus can be reached on standards - International Collaboration Goal



ISO National Standardization Bodies Active in Forensic Science



The ANSI Accredited U.S. Technical Advisory Group (TAG) to TC272

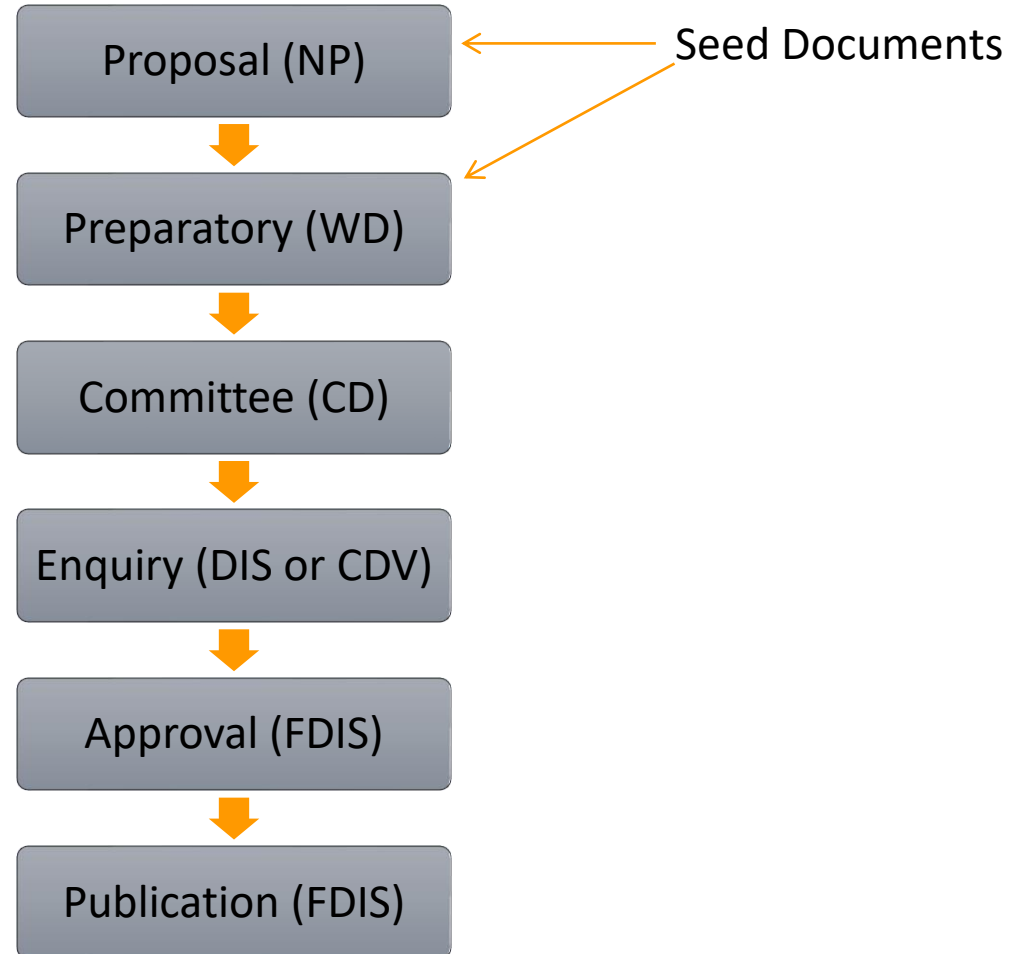


U.S. Technical Advisory Group

- Accredited by ANSI for participation in ISO Technical Activities
- Develop and transmit, via ANSI, consensus U.S. Positions on activities and ballots of the ISO Technical Committee or Subcommittees (Working Groups)
- Engage interest groups and experts in developing U.S. Positions



ISO Standard Development Process



NP = New Work Item Proposal

WD = Working Draft

CD = Committee Draft

DIS or CDV = Draft International Standard; Committee Draft for Vote (IEC)

FDIS = Final Draft International Standard

Project Stages in ISO Committees and Associated Document References



Seed Documents Provided by Standards Australia

The following Standards were used as the basis for documents drafted by TC 272:

- **AS 5388.1-2012 Forensic Analysis Part 1:** Recognition, recording, recovery, transport and storage of material
- **AS 5388.2-2012 Forensic Analysis Part II:** Analysis and examination of material
- **AS 5388.3-2013 Forensic Analysis Part III:** Interpretation
- **AS 5388.4-2013 Forensic Analysis Part IV:** Reporting



ISO/TC 272 Forensic Science

As of March 2019, two standards have been published:

- ISO 21043.1:2018 Forensic Sciences – Terms Definitions and framework
- ISO 21043.2 Forensic Sciences – Recognition, recording, recovering, transport and storage of material

And four standards are in the preparatory stage

- ISO/WD 21043.3 Forensic Sciences – Analysis and examination of material
- ISO/WD 21043.4 Forensic Sciences – Interpretation
- ISO/WD 21043.5 Forensic Sciences – Reporting
- ISO/WD 20964 – Specification for consumables used in the collection, preservation, and processing of material for forensic analysis



ISO/TC 272 Forensic Science

Scope of ISO 21043.2:2018 includes requirements for

- Preservation of the scene
- Assessment and examination of the scene
- Recording
- Collection of items
- Preservation of collected material
- Maintaining security, integrity and chain of custody of collected
- Transport of storage of items
- Other pertinent requirements

Potential Scope/Content of Standards Under Development

■ **Potential analysis standard content:**

- Acceptance of physical material received for examination
- Item continuity
- Recording physical material received for examination
- Presumptive and preliminary tests
- Order of examination
- Sampling
- Analysis and examination of physical material
- Identification of physical material by instrumental analysis
- Identification of physical material using comparative examination
- Linking an effect to a particular item
- Recording the results of observations, analyses and comparisons
- Reporting results



Potential Scope/Content of Standards Under Development

■ **Potential interpretation standard content:**

- Transforming data into information
- Review of information
- Interpretation of information
- Formulating an opinion
- Review of opinions
- Reducing bias
- Error
- Reporting results



Data Interpretation

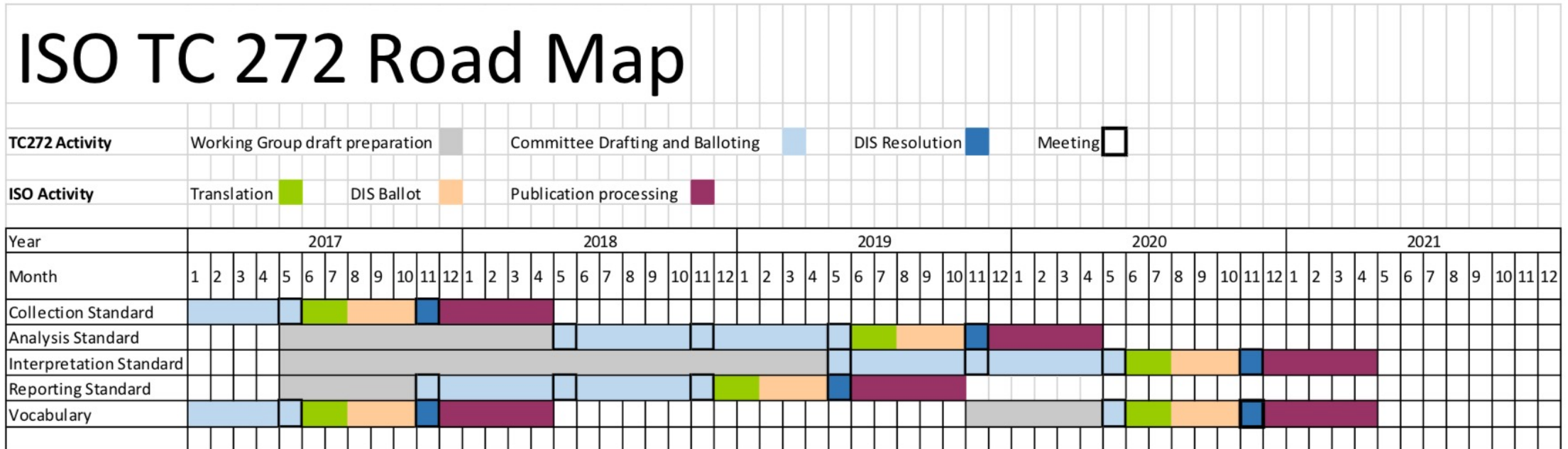
Potential Scope/Content of standards

- **Potential reporting standard content:**

- Case file review
- Report format
- Issue and control of reports
- Report contents
- Report review
- Testimony and testimony review



ISO TC 272 Road Map as of March 2017



NB: the project track of the Analysis (21043.3), Interpretation (21043.4), and Reporting (21043.5) has been changed from 36 months to a 48-month track in November of 2018

Other ISO Forensic Standards of Interest

- Subcommittee ISO/IEC JTC1 SC 27 **Security Techniques** has developed two standards relevant to digital forensics:
 - ISO/IEC 27042: 2015 Information Technology – Security Techniques – Guidelines for the Analysis and Interpretation of Digital Evidence
 - ISO/IEC 27037: 2012 Information Technology – Security Techniques – Guidelines for Identification, Collection, Acquisition and Preservation of Digital Evidence
- Subcommittee ISO/IEC JTC1 /SC 40 IT **Service Management and IT Governance** has developed the following standard:
 - ISO/IEC 30121:2015 Preview. Information Technology – Governance of digital forensic risk framework.
- Subcommittee ISO/IEC JTC1/SC 37 **Biometrics** is developing the following standard:
 - ISO/IEC AWI 22842.1 Information Technology – Biometric performance testing and reporting – Part 1: Methodology and tools for the validation of biometric methods for forensic evaluation and identification application

References

- Linzi Wilson-Wilde, NFIS, Australia New Zealand Policing Advisory Agency. *The international development of forensic science standards – A review. Forensic Science International, Elsevier* 288 (2018) 1-9
- *ANSI Procedures for U.S. Participation in the International Standards Activities of ISO* (January 2019). www.ansi.org/internationalprocedures
- *My ISO job – What delegates and experts need to know*, ISO 2018 edition
<https://www.iso.org/files/live/sites/isoorg/files/store/en/PUB100037.pdf>

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