



Australian Government
Department of Foreign Affairs and Trade

AUSTRALIAN
PASSPORT OFFICE

Biometrics Institute Technology Showcase
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Biometrics Standards - update

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International Organization for Standardisation



Joint Technical Committee One



International Electrotechnical Commission



International Civil Aviation Organization

TC 68
Banking, Securities
Financial services

SC37 to TC68

SC 17
Cards & Personal Identification

SC 27
IT Security Techniques

SC 37
Biometrics

— SC 37 Formal Liaisons

European Committee for Standardization



ISO SC37 – objective and Scope

Established by JTC 1 in June 2002 to ensure

- a high-priority, focused and comprehensive approach worldwide for the rapid development of formal generic biometric standards

Scope of SC37

- *“Standardization of **generic biometric** technologies pertaining to **human beings** to support **interoperability** and data interchange among applications and systems. Generic human biometric standards include: common file frameworks; biometric application programming **interfaces**; biometric data interchange **formats**; related biometric **profiles**; application of **evaluation criteria** to biometric technologies; methodologies for **performance testing** and reporting and cross jurisdictional and **societal aspects**”*
- <http://www.jtc1.org>

Next meeting: Jan, 2020

ISO SC37 – Members

Members in SC37

- 29 Participating members (P-member):
 - Australia, Canada, China, Czech Republic, Denmark, Egypt, Finland, France, Germany, India, Israel, Italy, Japan, Republic of Korea, Malaysia, Netherlands, New Zealand, Norway, Poland, Portugal, Russian Federation, Singapore, South Africa, Spain, Sweden, Switzerland, Ukraine, United Kingdom, United States of America.
- 13 Observing members (O-member):
 - Austria, Belgium, Bosnia and Herzegovina, Ghana, Hungary, Indonesia, Islamic Republic of Iran, Ireland, Kenya, Romania, Serbia, Thailand, Turkey

ISO SC37 – Working Groups

6 Working Group (WG)

- WG1 - Harmonized biometric vocabulary
- WG2 - Biometric technical interfaces
- WG3 - Biometric data interchange formats
- WG4 - Technical Implementation of Biometric Systems
- WG5 - Biometric testing and reporting
- WG6 - Cross-Jurisdictional and Societal Aspects of Biometrics

ISO SC37 – Working Group 1

Title: Harmonized Biometric Vocabulary

- Convenor: Steve Clarke (Australia)

Terms of Reference:

- Create a document of **terms and definitions** to be used throughout SC37 International Standards.
- Define a process for accepting or developing terms and definitions based on appropriate ISO/IEC standards.
- Identify sources of terms and definitions for possible use in an SC37 vocabulary
- Minimize ambiguity in terms and definitions in SC37 Standards arising from differences in cultures.

“Getting the language harmonized and correct”

ISO SC37 – Working Group 2

Title: Biometric Technical Interfaces

- Convenor: Young Bin Kwon (Korea)

Terms of Reference:

- To consider the standardization of all necessary **interfaces** and interactions between **biometric components** and sub-systems, including the possible use of security mechanisms to protect stored data and data transferred between systems. To consider the need for a reference model for the architecture and operation of biometric systems in order to identify the standards that are needed to support multi-vendor systems and their application.

“Getting equipment to talk together”

ISO SC37 – Working Group 3

Title: Biometric Data Interchange

- Convenor: Christoph Busch (Germany)

Terms of Reference:

- To consider the standardisation of the content, meaning, and **representation** of **biometric data** formats which are specific to a particular biometric technology. To ensure a common look and feel for Biometric Data Structure standards, with notation and transfer formats that provide platform independence and separation of transfer syntax from content definition

“Getting equipment to understand each other”

ISO SC37 – Working Group 4

Title: Technical Implementation of Biometric Systems

- Convenor: Greg Cannon (U.S.)

Terms of Reference:

- Develop technical best practices, guidance, implementation requirements and **biometric profiles** that support the successful use and interoperability of biometric applications

“Making it fit the purpose”

ISO SC37 – Working Group 5

Title: Biometric Testing and Reporting

- Convenor: Ambika Suman (UK)

Terms of Reference:

- To create testing and reporting **methodologies** and **metrics** that cover biometric technologies, systems and components
- To develop Working Drafts for approved projects on biometric testing and reporting.

“how to check it works”

ISO SC37 – Working Group 6

Title: Cross-Jurisdictional and Societal Aspects

- Convenor: Mario Savastano (Italy)

Terms of Reference:

- Within this context, the terms of reference include the support of **design** and implementation of biometric technologies **with respect to: accessibility, health and safety**, support of legal requirements and acknowledgement of cross-jurisdictional and societal considerations pertaining to personal information.

“making it acceptable”

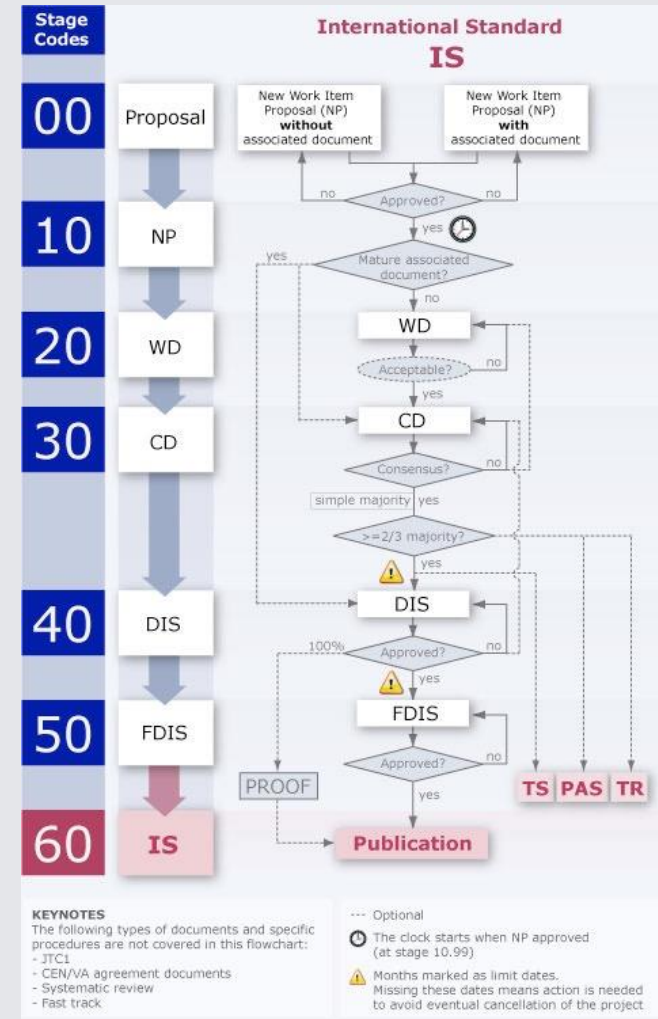
Process - Standards development

Progression levels

- Working Draft (WD)
- Committee Draft (CD)
- Draft International Standard (DIS)
- Final Draft International Standard (FDIS)
- International Standard (IS)

Issues to consider:

- Need for mature technology
- Decisions are made on **consensus**
- **Commenting** periods
- Potentially multiple loops at one level
- Need to progress
- Five year revision cycle

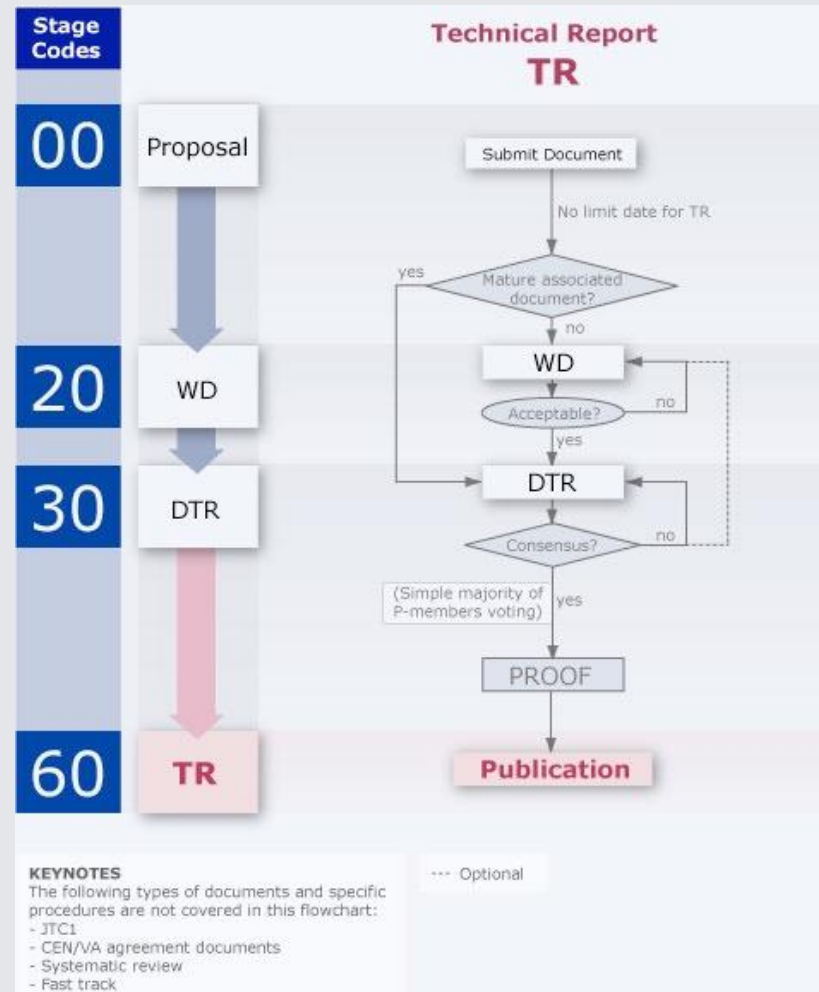


Process – Technical Reports

Technical Report

- Data of a different kind from that which is normally published as an IS.
- Examples:
 - data obtained from a survey
 - state of the art
- A technical report shall not contain matter implying that it is normative

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Standards/TR in progress – WG1 & 2

WG1

- 2382-37:2017 Harmonized Biometric Vocabulary
- TR 24741:2018: Biometrics – Overview and Application

WG2

- Standing documents 16, 17 & 18 – best practice guidance on use of XML and ASN 1 – direct impact on 39794 docs
- 19784 set of Standards on BioAPI
- 19785 Common Biometric Exchange Format Framework (CBEFF) – data storage eg. ePassports
- 30106 Standards – BioAPI Object Oriented Standards

Standards/TR in progress – WG3

- 49794-5 - Guidelines for best practice to migrate from 19794-5 to 39794-5 - Biometric Data Interchange Formats
- 39794 - Multi Part Standard – Biometric Sample Quality with a particular focus on face and fingerprint
- 30107 Multi Part Standard – Presentation Attack Detection
- 39794-6 Extensible biometric data interchange formats – Part 6: Iris Image Data
- 19794-14 Biometric data interchange format - Part 14: DNA data
- 30137-4 - Use of biometrics in video surveillance systems — Part 4: Ground truth and video annotation procedure
- 29109-5, Conformance testing methodology for biometric interchange format records – Part 5: Face image data

Standards/TR in progress – WG4

22604 – Biometric Recognition in Motion

- Verification and Identification without physical contact while subjects are moving, dealing with camera placement, flow control, credential collection, and blacklist/whitelist integration, across a spectrum of flow constraints

49794 – Guidelines for Transition for Facial Data Interchange Formats

- Migration, Interoperability, and Mappings between legacy face data formats (19794-5) and modern formats (39794-5)

24358 – Facial Aware Capture Subsystem Specification

- Requirements for automated systems for the capture of high quality facial images conforming to 19794/39794-5

Standards/TR in progress WG 5

WG 5

New work items that may be proposed in the near future include:

- statistical and analytical methods for the extrapolation error rates observed on small scale tests to larger populations
- The return of 30137-2: Use of biometrics in video surveillance systems – Part 2: Performance testing and reporting. This project was previously cancelled but work to progress the document has been conducted under ad hoc work group.

Standards/TR in progress – WG5

Other areas of future interest are:

Testing of biometric processes e.g. Segmentation, detection, how effective these are and defining the metrics and approaches that would be required to test this -

Fusion – multimodal biometrics and testing requirements or approaches

Face and Presentation Attack Detection – how this may result demands for certification or lab accreditation which would in turn need to be informed by testing

Tests concerning **demographic factors** of biometrics.

Contactless or in-motion identification, in particular TR 22604 Use of Biometric Recognition-in-motion in Access Related Systems is currently being developed under WG 4.

Standards/TR in progress

WG6

- TR 22116 - Identifying and mitigating the differential impact of demographic factors in biometric systems.
- TR20322 - Cross jurisdictional and societal aspects of implementation of biometric technologies - Biometrics and Elderly People
- 24779-5 Cross-jurisdictional and societal aspects of implementation of biometric technologies - Pictograms, Icons and Symbols for use with Biometric Systems - Part 5: Face Applications

Questions



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