An insight into biometrics good practices

2021 ICAO TRIP VIRTUAL SYMPOSIUM

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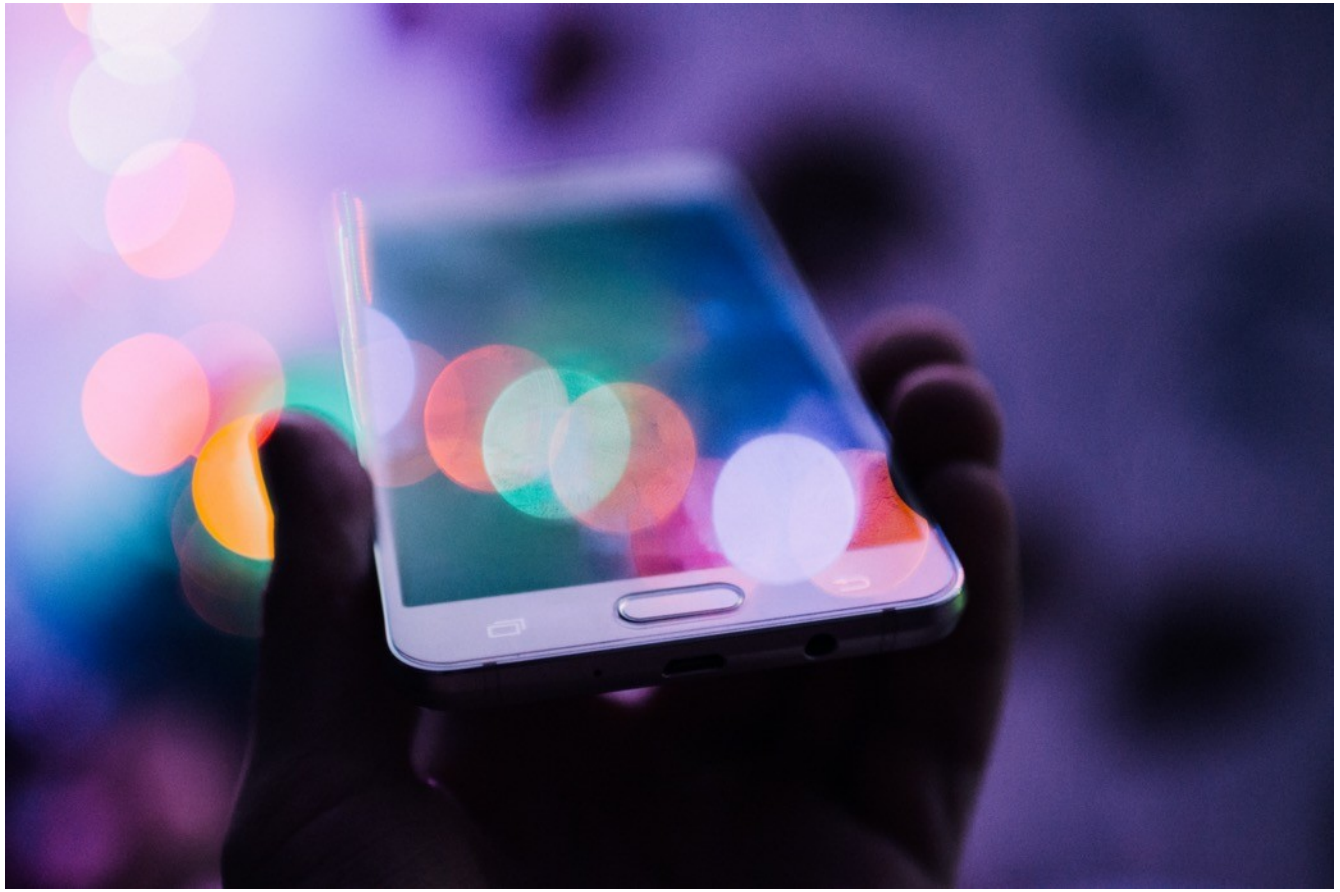
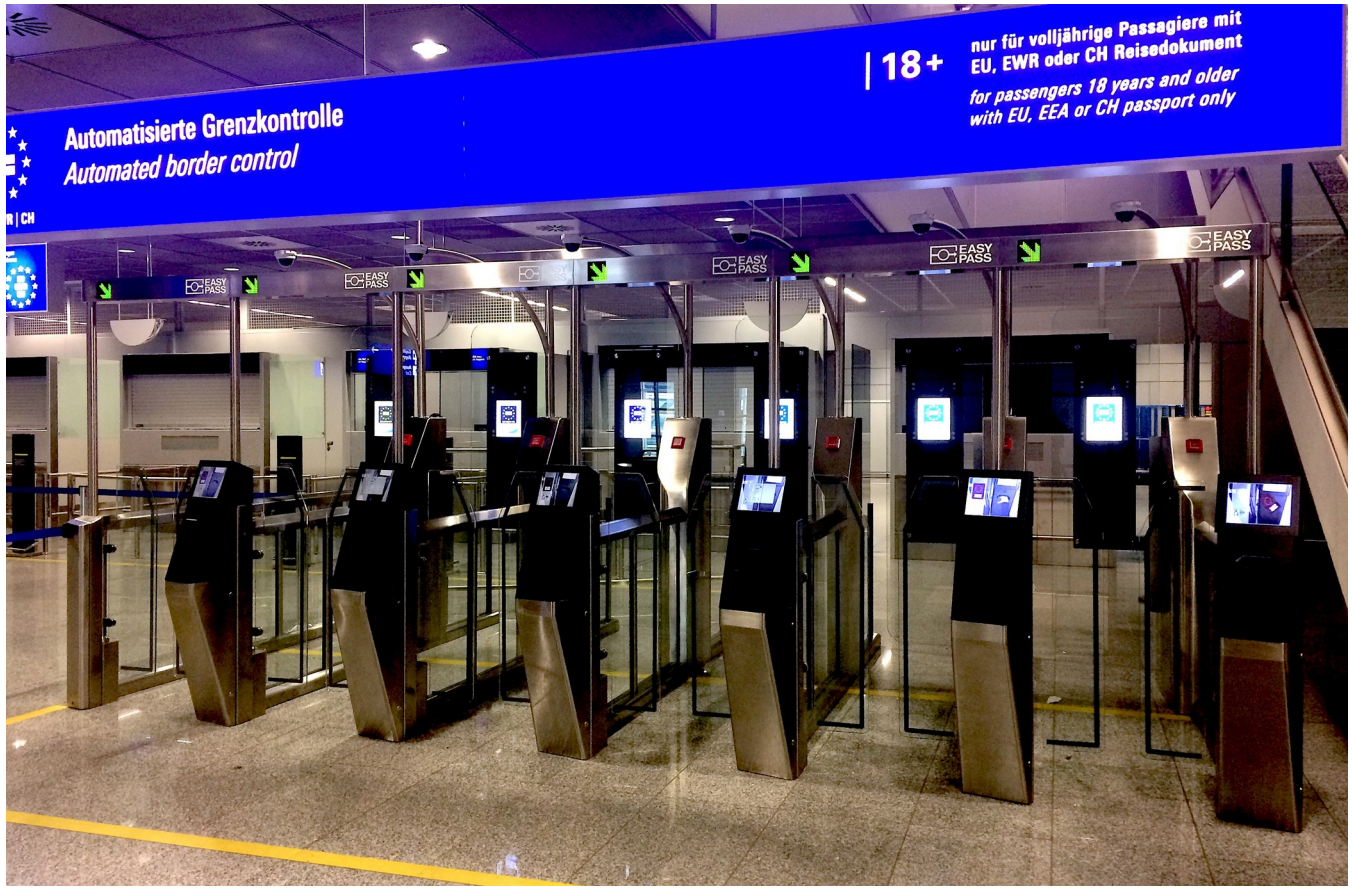
Policy and standards development takes time

Contactless is imperative

Surge in remote onboarding



Biometric gates provide efficiency and security



Identity and health credentials

Know your implementation - recent releases

Should we ban facial recognition viewpoint paper

Digital onboarding and biometrics guiding paper

State of Biometrics Report podcast

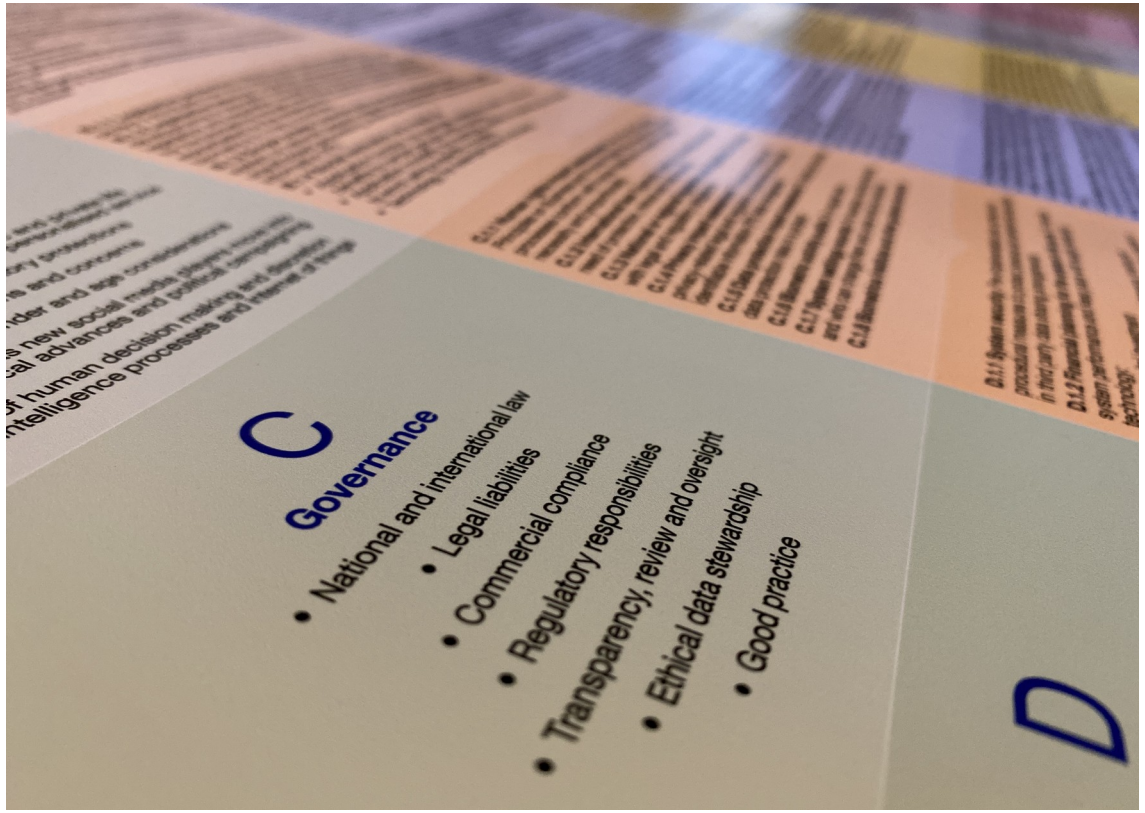
The Three Laws of Biometrics

1. **POLICY** – comes first: Any use of biometrics is proportionate, with basic human rights, ethics and privacy at its heart.

2. **PROCESS** – follows policy: Safeguards are in place to ensure decisions are rigorously reviewed, operations are fair and operators are accountable.

3. **TECHNOLOGY** – guided by policy and process: Know your algorithm, biometric system, data quality and operating environment and mitigate vulnerabilities, limitations and risks.

Biometrics Institute Good Practice Framework

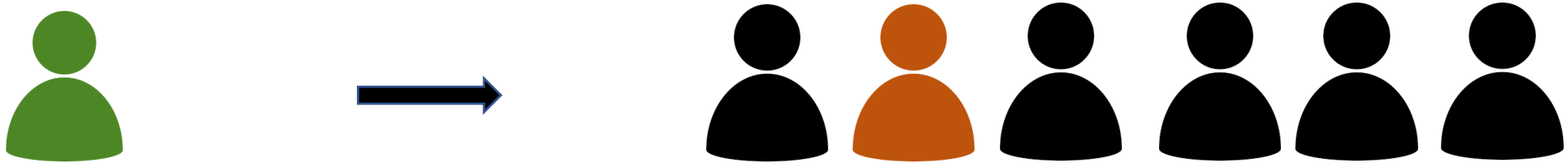


A first-of-its-kind tool which provides a structured pathway through the factors that may influence or constrain a biometric application

Privacy Guidelines update

- The revised *Privacy Guidelines* released at the beginning of May
- Two new principles have been added

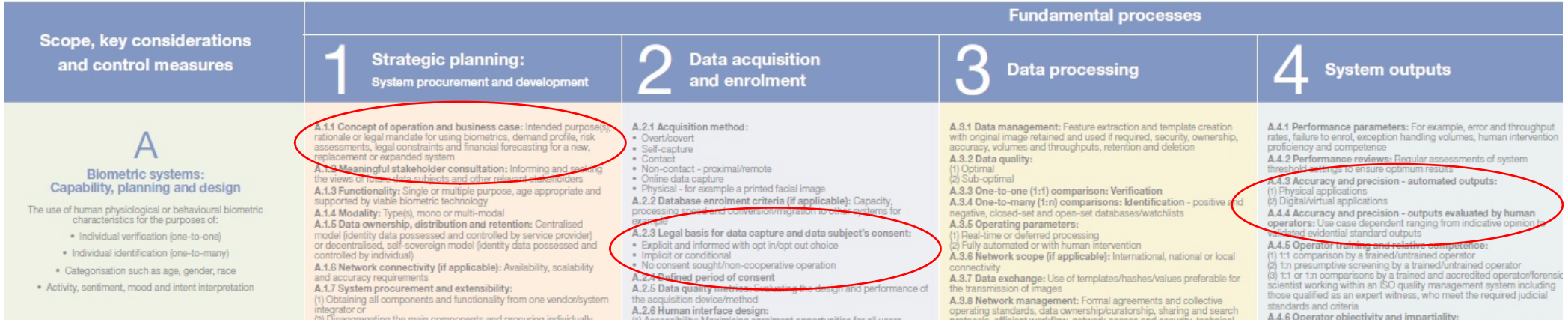
What does this mean in practice?



Scenario:

1 : 1 automated face verification e-gates -> adding watch list capability to search the faces 1:n

What does this mean in practice?



Scope, key considerations and control measures	Fundamental processes			
	1 Strategic planning: System procurement and development	2 Data acquisition and enrolment	3 Data processing	4 System outputs
A **Biometric systems: Capability, planning and design** The use of human physiological or behavioural biometric characteristics for the purposes of: • Individual verification (one-to-one) • Individual identification (one-to-many) • Categorisation such as age, gender, race • Activity, sentiment, mood and intent interpretation	**A.1.1 Concept of operation and business case:** Intended purpose(s), rationale or legal mandate for using biometrics, demand profile, risk assessments, legal constraints and financial forecasting for a new, replacement or expanded system **A.1.2 Meaningful stakeholder consultation:** Informing and seeking the views of future data subjects and other relevant stakeholders **A.1.3 Functionality:** Single or multiple purpose, age appropriate and supported by viable biometric technology **A.1.4 Modality:** Type(s), mono or multi-modal **A.1.5 Data ownership, distribution and retention:** Centralised model (identity data possessed and controlled by service provider) or decentralised, self-sovereign model (identity data possessed and controlled by individual) **A.1.6 Network connectivity (if applicable):** Availability, scalability and accuracy requirements **A.1.7 System procurement and extensibility:** (1) Obtaining all components and functionality from one vendor/system integrator or	**A.2.1 Acquisition method:** • Overt/covert • Self-capture • Contact • Non-contact - proximal/remote • Online data capture • Physical - for example a printed facial image **A.2.2 Database enrolment criteria (if applicable):** Capacity, processing speed and conversion/migration to other systems for example **A.2.3 Legal basis for data capture and data subject's consent:** • Explicit and informed with opt in/opt out choice • Implicit or conditional • No consent sought/non-cooperative operation **A.2.4 Defined period of consent** **A.2.5 Data quality metrics:** Evaluating the design and performance of the acquisition device/method **A.2.6 Human interface design:**	**A.3.1 Data management:** Feature extraction and template creation with original image retained and used if required, security, ownership, accuracy, volumes and throughputs, retention and deletion **A.3.2 Data quality:** (1) Optimal (2) Sub-optimal **A.3.3 One-to-one (1:1) comparison: Verification** **A.3.4 One-to-many (1:n) comparisons: Identification** - positive and negative, closed-set and open-set databases/watchlists **A.3.5 Operating parameters:** (1) Real-time or deferred processing (2) Fully automated or with human intervention **A.3.6 Network scope (if applicable):** International, national or local connectivity **A.3.7 Data exchange:** Use of templates/hashes/values preferable for the transmission of images **A.3.8 Network management:** Formal agreements and collective operating standards, data ownership/curatorship, sharing and search	**A.4.1 Performance parameters:** For example, error and throughput rates, failure to enrol, exception handling volumes, human intervention proficiency and competence **A.4.2 Performance reviews:** Regular assessments of system threshold settings to ensure optimum results **A.4.3 Accuracy and precision - automated outputs:** (1) Physical applications (2) Digital/virtual applications **A.4.4 Accuracy and precision - outputs evaluated by human operators:** Use case dependent ranging from indicative opinion to validated evidential standard outputs **A.4.5 Operator training and relative competence:** (1) 1:1 comparison by a trained/untrained operator (2) 1:n presumptive screening by a trained/untrained operator (3) 1:1 or 1:n comparisons by a trained and accredited operator/forensic scientist working within an ISO quality management system including those qualified as an expert witness, who meet the required judicial standards and criteria **A.4.6 Operator objectivity and impartiality:**

Good Practice Framework

A.1.1 Concept of operations and business case & **A.2.3** legal basis for data capture & **A.1.2.** Meaningful stakeholder consultation

A.1.4 Modality & **A.4.3** accuracy **& B.4.2** system bias

What does this mean in practice?

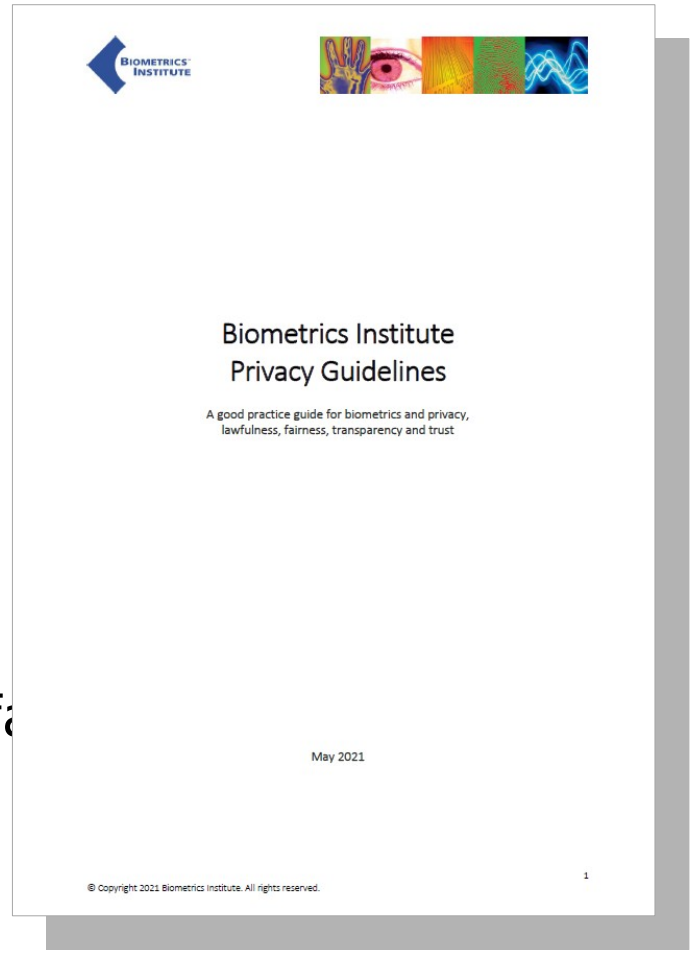
Privacy Guidelines

Mistakes occur - expert human intervention needed

Principle 8: Non-discrimination

Principle 6: Fair handling of complaints and enquiries

Principle 6: Truth and accuracy in business and legal affa



Engage with us

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www.biometricsinstitute.org

Connect with us on social media:

#IDBorders
#BIDebates

Upcoming events

- **2 June 2021:** Member Meeting – Updates from Australia and New Zealand, online
- **29 June 2021:** Member Meeting – Updates from the US, online
- **6, 13, 20 & 26 October 2021**: Biometrics Institute Congress, London, online
- **17 November 2021:** Showcase Australia, Canberra
- **On demand:** Biometrics Vulnerabilities Workshop - How robust is your system?
- **On demand:** Global Good Practice Series: Biometrics and surveillance