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**Information technology — Biometric  
performance testing and reporting —**

**Part 6:  
Testing methodologies for operational  
evaluation**

*Technologies de l'information — Essais et rapports de performances  
biométriques —*

*Partie 6: Méthodologies d'essai pour l'évaluation opérationnelle*

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## Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 19795-6 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 37, *Biometrics*.

ISO/IEC 19795 consists of the following parts, under the general title *Information technology — Biometric performance testing and reporting*:

- *Part 1: Principles and framework*
- *Part 2: Testing methodologies for technology and scenario evaluation*
- *Part 3: Modality-specific testing* [Technical Report]
- *Part 4: Interoperability performance testing*
- *Part 5: Access control scenario and grading scheme*
- *Part 6: Testing methodologies for operational evaluation*
- *Part 7: Testing of on-card biometric comparison algorithms*

## Introduction

Operational tests evaluate complete biometric systems in the targeted operational environment with the target population. Tests may encompass performance monitoring of operational systems or assessment of performance in operational trials.

Operational performance assessment may be based on:

- data collected by the operational system in the course of normal operation;
- additional data collected during normal system use, but with the system running in an “evaluation mode” allowing extra data to be collected;
- data collected with a set of test subjects considered separately from the subject base of the operational system.

Operational evaluation differs from technology or scenario evaluation in that the subject base, environment, and system design are no longer controlled for the purpose of repeatable testing, but vary in accordance with operational use. Examples of uncontrolled variables include the legitimacy of the subject’s identity claim, environmental effects from weather or lighting, or the variability of system use by different individuals.

The overarching goals of operational testing are to measure or monitor operational biometric system performance over a period of time.

Subgoals of operational testing may include:

- to determine if performance meets the requirements specified for a particular application or the claims asserted by the supplier;
- to determine the need to adjust or configure the system to improve performance;
- to predict performance as the numbers of subjects, locations, or devices increase;
- to obtain information on the target population and environmental parameters found to affect system performance;
- to obtain performance data from a pilot implementation;
- to obtain performance data to benchmark future systems.

This part of ISO/IEC 19795 provides the test planning, test conduct, performance measurement, test reporting, and record keeping requirements to be followed during a biometric system’s operational evaluation.

# Information technology — Biometric performance testing and reporting —

## Part 6: Testing methodologies for operational evaluation

### 1 Scope

This part of ISO/IEC 19795:

- provides guidance on the operational testing of biometric systems;
- specifies performance metrics for operational systems;
- details data that may be retained by operational systems to enable performance monitoring; and
- specifies requirements on test methods, recording of data, and reporting of results of operational evaluations.

NOTE Some operational biometric systems perform a single biometric function. For example, in the initial stages of rollout of biometric passports, the operational system might be performing biometric enrolment only. Operational evaluation of such systems is within the scope of this part of ISO/IEC 19795.

This part of ISO/IEC 19795 does not:

- cover testing of operational systems in the laboratory or
- address vulnerability testing.

### 2 Conformance

An operational evaluation is in conformance with this part of ISO/IEC 19795 if it is planned, executed and reported in accordance with the requirements of Clause 6.

### 3 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 19795-1, *Information technology — Biometric performance testing and reporting — Part 1: Principles and framework*