

# ISO/IEC 30107-3:2023-01 (E)

## Information technology - Biometric presentation attack detection - Part 3: Testing and reporting

---

<b>Contents</b>		<b>Page</b>
Foreword .....		v
Introduction .....		vi
1	Scope .....	1
2	Normative references .....	1
3	Terms and definitions .....	2
3.1	Attack elements .....	2
3.2	Metrics .....	3
3.3	Test roles .....	5
4	Abbreviated terms .....	6
5	Conformance .....	7
6	Presentation attack detection (PAD) overview .....	7
7	Levels of evaluation of PAD mechanisms .....	8
7.1	Overview .....	8
7.2	General principles of evaluation of PAD mechanisms .....	9
7.3	PAD subsystem evaluation .....	9
7.4	Data capture subsystem evaluation .....	10
7.5	Full system evaluation .....	10
8	Artefact properties .....	11
8.1	Properties of PAs in biometric impostor attacks .....	11
8.2	Properties of PAs in biometric concealer attacks .....	12
8.3	Properties of synthesized biometric samples with abnormal characteristics .....	12
9	Considerations in non-conformant capture attempts of biometric characteristics .....	13
9.1	Methods of presentation .....	13
9.2	Methods of assessment .....	13
10	Artefact creation and usage in evaluations of PAD mechanisms .....	13
10.1	General .....	13
10.2	Artefact creation and preparation .....	13
10.3	Artefact usage .....	14
10.4	Iterative testing to identify effective artefacts .....	15
11	Process-dependent evaluation factors .....	15
11.1	Overview .....	15
11.2	Evaluating the enrolment process .....	15
11.3	Evaluating the verification process .....	16
11.4	Evaluating the identification process .....	16
11.5	Evaluating offline PAD mechanisms .....	17
12	Evaluation using Common Criteria framework .....	17
12.1	General .....	17
12.2	Common Criteria and biometrics .....	18

12.2.1	Overview .....	18
12.2.2	General evaluation aspects .....	19
12.2.3	Error rates in testing .....	19
12.2.4	PAD evaluation .....	19
12.2.5	Vulnerability assessment .....	20
13	Metrics for the evaluation of biometric systems with PAD mechanisms .....	21
13.1	General .....	21
13.2	Metrics for PAD subsystem evaluation .....	22
13.2.1	General .....	22
13.2.2	Classification metrics .....	22
13.2.3	Non-response metrics .....	25
13.2.4	Efficiency metrics .....	25
13.2.5	Summary .....	25
13.3	Metrics for data capture subsystem evaluation .....	25
13.3.1	General .....	25
13.3.2	Acquisition metrics .....	26
13.3.3	Non-response metrics .....	26
13.3.4	Efficiency metrics .....	26
13.3.5	Summary .....	26
13.4	Metrics for full system evaluation .....	27
13.4.1	General .....	27
13.4.2	Accuracy metrics .....	27
13.4.3	Efficiency metrics .....	27
13.4.4	Generalized full-system evaluation performance .....	28
13.4.5	Summary .....	30
Annex A (informative) Classification of attack types .....		32
Annex B (informative) Examples of artefact species used in a PAD subsystem evaluation for fingerprint capture devices .....		36
Annex C (informative) Roles in PAD testing .....		37
Bibliography .....		38