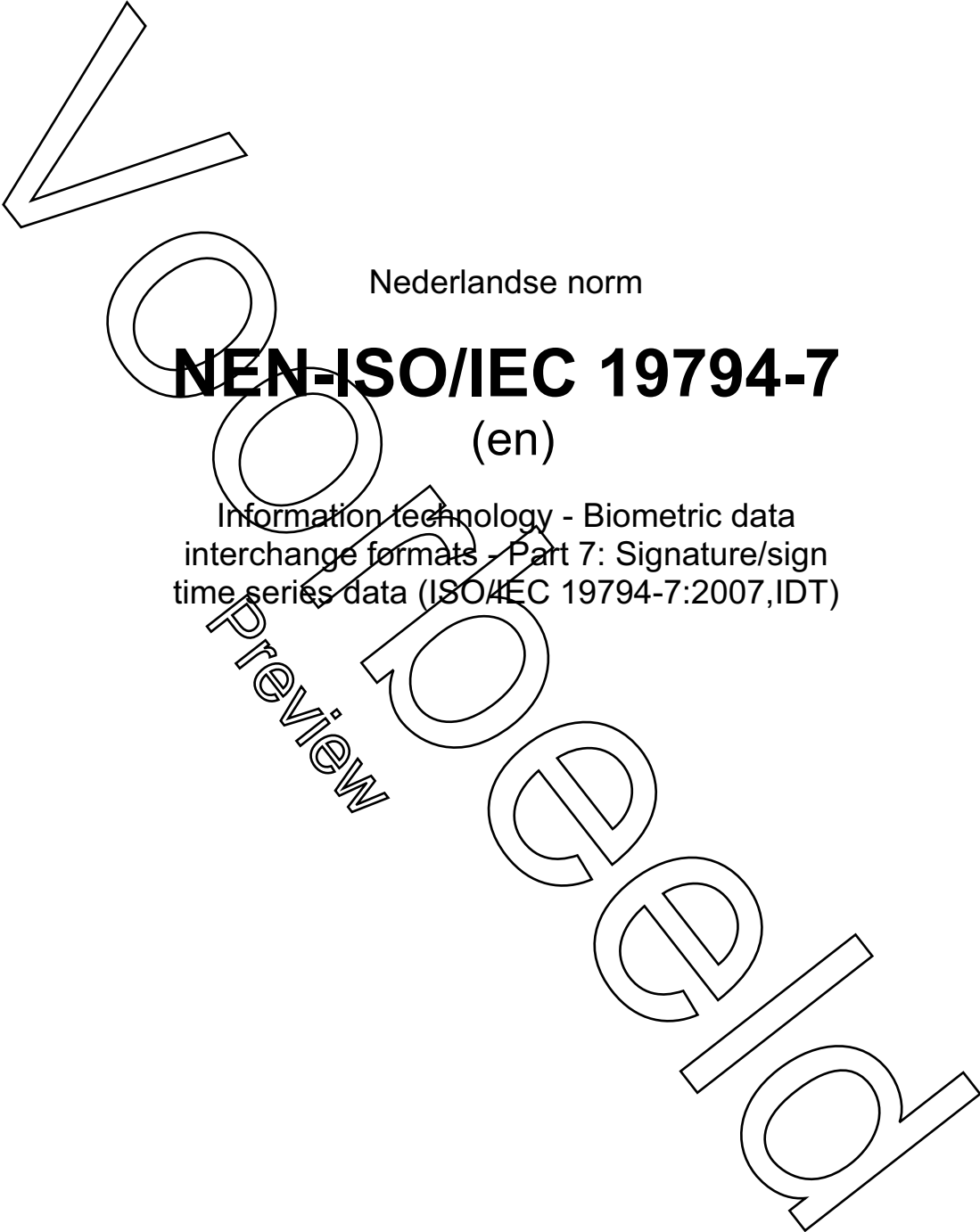


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Nederlandse norm

# **NEN-ISO/IEC 19794-7**

(en)

Information technology - Biometric data interchange formats - Part 7: Signature/sign time series data (ISO/IEC 19794-7:2007, IDT)

ICS 35.040  
juni 2007

Als Nederlandse norm is aanvaard:

- ISO/IEC 19794-7:2007, IDT

VOORBEELD  
Preview

Normcommissie 381 001 "JTC Algemeen"

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Information technology — Biometric data  
interchange formats —  
Part 7:  
Signature/sign time series data

*Technologies de l'information — Formats d'échange de données  
biométriques —  
Partie 7: Données de série chronologique de signature/signé*

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## Contents

Page

Foreword.....	iv
1 Scope .....	1
2 Conformance.....	1
3 Normative references .....	1
4 Terms and definitions.....	2
5 Conventions.....	4
5.1 Coordinate system.....	4
5.2 Octet order.....	4
5.3 Registered format type identifiers .....	4
6 Channels.....	5
6.1 General.....	5
6.2 Pen position channels: X, Y, Z .....	5
6.3 Pen velocity channels: VX, VY .....	6
6.4 Pen acceleration channels: AX, AY .....	6
6.5 Time channel: T.....	6
6.6 Time difference channel: DT.....	6
6.7 Pen tip force channel: F.....	6
6.8 Tip switch state channel: S.....	6
6.9 Pen orientation channels: TX, TY, Az, El, R.....	6
7 Full format .....	7
7.1 Introduction .....	7
7.2 BDB organisation.....	7
7.3 BDB header .....	7
7.4 BDB body.....	11
8 Compact format .....	12
8.1 Introduction .....	12
8.2 Matching algorithm parameters template.....	13
8.3 Embedment in a CBEFF data structure.....	14
8.4 BDB body.....	15
Annex A (informative) Best practices — Data acquisition.....	16
Annex B (informative) ASN.1 specification of the data interchange formats.....	17
Annex C (informative) Signature/sign coding examples.....	21
Bibliography .....	23

## ISO/IEC 19794-7:2007(E)

## 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 19794-7 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 37, *Biometrics*.

ISO/IEC 19794 consists of the following parts, under the general title *Information technology — Biometric data interchange formats*:

- *Part 1: Framework*
- *Part 2: Finger minutiae data*
- *Part 3: Finger pattern spectral data*
- *Part 4: Finger image data*
- *Part 5: Face image data*
- *Part 6: Iris image data*
- *Part 7: Signature/sign time series data*
- *Part 8: Finger pattern skeletal data*
- *Part 9: Vascular image data*
- *Part 10: Hand geometry silhouette data*

The following part is under preparation:

- *Part 11: Signature/sign processed dynamic data*

# Information technology — Biometric data interchange formats

## Part 7: Signature/sign time series data

### 1 Scope

For the purposes of biometric verification and/or identification, this part of ISO/IEC 19794 specifies a concept and data interchange formats for dynamic signature/sign behavioural data captured in the form of a time series using devices such as digitizing tablets or advanced pen systems. The data interchange formats are generic in that they may be applied and used in a wide range of application areas where handwritten signs or signatures are involved. No application-specific requirements or features are addressed in this part of ISO/IEC 19794. This part of ISO/IEC 19794 contains definitions of relevant terms, a description of what data is captured, two data formats for containing the data — one for general use and one compact format for use with smart cards and other tokens — alongside examples of data block contents and best practice in capture.

Specifying which of the format types and which options defined in this part of ISO/IEC 19794 are to be applied in a particular application is out of the scope of this part of ISO/IEC 19794; this needs to be defined in application-specific requirements specifications or application profiles. It is advisable that stored and transmitted biometric data be time-stamped and that cryptographic techniques be used to protect their authenticity, integrity and confidentiality, however such provisions are beyond the scope of this part of ISO/IEC 19794.

### 2 Conformance

A biometric data block conforms to this part of ISO/IEC 19794 if it satisfies the format requirements with respect to its structure, with respect to relations among its fields, and with respect to relations between its fields and the underlying input that are specified within the normative clauses of this part of ISO/IEC 19794.

### 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 19785-1, *Information technology — Common Biometric Exchange Formats Framework — Part 1: Data element specification*

ISO/IEC 19785-2, *Information technology — Common Biometric Exchange Formats Framework — Part 2: Procedures for the operation of the Biometric Registration Authority*

**ISO/IEC 19794-7:2007(E)**

ISO/IEC 19785-3, *Information technology — Common Biometric Exchange Formats Framework — Part 3: Patron format specifications* <sup>1)</sup>

ISO/IEC 19794-1, *Information technology — Biometric data interchange formats — Part 1: Framework*

**4 Terms and definitions**

For the purposes of this document, the terms and definitions given in ISO/IEC 19794-1 and the following apply.

- 4.1 signature/sign**  
handwritten signature or handwritten personal sign
- 4.2 time series**  
sequence of values sampled at successive points in time
- 4.3 biometric data block**  
**BDB**  
block of data with a defined format that contains one or more biometric samples or biometric templates
- 4.4 channel**  
data item (acquired, intermediate or processed) recorded in the form of a time series
- NOTE Examples include pen position, pen tip force and tilt.
- 4.5 pen azimuth**  
angle measured clockwise from the positive y axis to the perpendicular projection of the pen onto the writing plane
- NOTE For an illustration, see Figure 1 (upper left and lower left).
- 4.6 pen elevation**  
angle measured counter-clockwise from the perpendicular projection of the pen onto the writing plane to the pen
- NOTE For an illustration, see Figure 1 (upper left and lower left).
- 4.7 pen tilt along the x axis**  
angle measured clockwise from the positive z axis to the perpendicular projection of the pen onto the x,z plane
- NOTE For an illustration, see Figure 1 (upper right and lower left).
- 4.8 pen tilt along the y axis**  
angle measured clockwise from the positive z axis to the perpendicular projection of the pen onto the y,z plane
- NOTE For an illustration, see Figure 1 (upper right and lower left).

1) To be published.



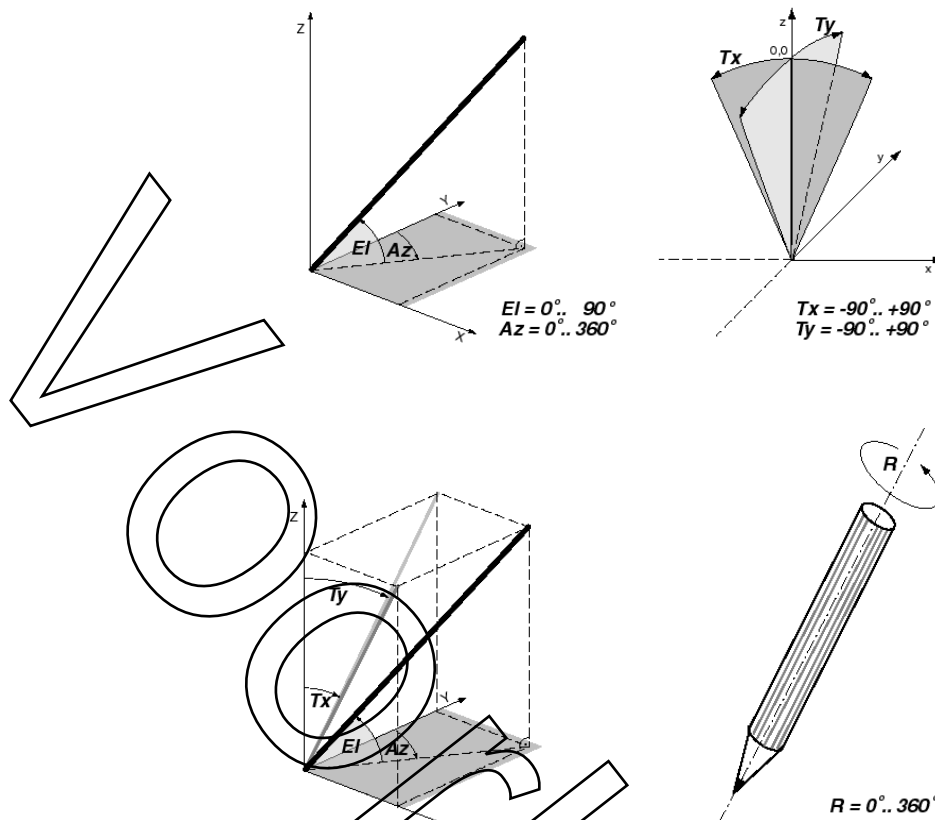


Figure 1 — Azimuth and elevation angles (upper left), tilt angles (upper right), pen orientation decomposition (lower left), and pen rotation (lower right)

**4.9**

**pen rotation**

angle of rotation of the pen about its longitudinal axis measured counter-clockwise from a device-specific reference rotational position

NOTE For an illustration, see Figure 1 (lower right).

**4.10**

**X jitter**

standard deviation of 100 x-coordinate samples from a stationary pen

**4.11**

**Y jitter**

standard deviation of 100 y-coordinate samples from a stationary pen

**4.12**

**X resolution**

number of dots per centimetre that the capture device resolves in the X (horizontal) direction

**4.13**

**Y resolution**

number of dots per centimetre that the capture device resolves in the Y (vertical) direction

**4.14**

**Z resolution**

number of dots per centimetre that the capture device resolves in the Z direction

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