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Health informatics – Patient healthcare data – Part 5: Identification Data

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The **table of contents** is an optional preliminary element, but is necessary if it makes the standard easier to consult. The table of contents shall be entitled “Contents” and shall list clauses and, if appropriate, subclauses with titles, annexes together with their status in parentheses, the bibliography, index(es), figures and tables. The order shall be as follows: clauses and subclauses with titles; annexes (including clauses and subclauses with titles if appropriate); the bibliography; index(es); figures; tables. All the elements listed shall be cited with their full titles. Terms in the “Terms and definitions” clause shall not be listed in the table of contents.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

This is part 5 of a multi-part standard that is intended to contain the following parts:

Health informatics - Patient healthcard data - Part 1: General structure

Health informatics - Patient healthcard data - Part 2: Common objects

Health informatics - Patient healthcard data - Part 3: Limited clinical data

Health informatics - Patient healthcard data - Part 4: Extended clinical data

Health informatics - Patient healthcard data - Part 5: Identification data

Health informatics - Patient healthcard data - Part 6: Administrative data

Health informatics - Patient healthcard data - Part 7: Electronic prescription

Health informatics - Patient healthcard data - Part 8: Linkage and reference data

This work is developed by ISO/TC 215/WG 5 "Health cards" in collaboration with CEN/TC 251 under Vienna agreement with ISO in the lead. This new series of international standards is intended to replace the European Prestandard ENV 12018 adopted by CEN in 1995.

Introduction

This is part 5 of an eight part draft International Standard which provides data structures and definitions for data objects on patient data cards.

With a more mobile population, greater healthcare delivery in the community and at patients' homes, together with a growing demand for improved quality of ambulatory care, portable information systems and stores have increasingly been developed and used. Such devices are used for tasks ranging from identification, through portable medical record files, and on to patient-transportable monitoring systems.

The functions of such devices are to carry and to transmit person-identifiable information between themselves and other systems; therefore, during their operational lifetime they may share information with many technologically different systems which differ greatly in their functions and capabilities.

Healthcare administration increasingly relies upon similar automated identification systems. For instance prescriptions may be automated and data exchange carried out at a number of sites using patient transportable computer readable devices. Healthcare insurers and providers are increasingly involved in cross-region care, where reimbursement may require automated data exchange between dissimilar healthcare systems.

The advent of remotely accessible data bases and support systems has led to the development and use of "Healthcare Person" identification devices that are also able to perform security functions and transmit digital signatures to remote systems via networks.

With the growing use of data cards for practical everyday healthcare delivery, the need has arisen for a standardised data format for interchange.

The person related data carried by a data card can be categorised in three broad types: identification (of the device itself and the individual to whom the data it carries relates), administrative and clinical. It is important to realise that a given healthcare data card "de facto" has to contain device data and identification data and may in addition contain administrative, clinical, prescription and linkage data.

Device data is defined to include

- identification of the device itself;
- identification of the functions and functioning capabilities of the device.

Identification data may include:

- unique identification of the device holder or of all other persons to whom the data carried by the device are related.

Administrative data may include:

- complementary person(s) related data;
- identification of the funding of health care, whether public or private, and their relationships i.e. insurer(s), contract(s) and policy(ies) or types of benefits;
- other data (distinguishable from clinical data) that are necessary for the purpose of healthcare delivery.

Clinical data may include:

- items that provide information about health and health events;
- their appraisal and labeling by a healthcare provider (HCP);
- related actions planned requested or performed;

Prescription data may include :

- a record of medications received or taken by the patient
- copies of prescriptions including the authority to dispense records of dispensed medications
- records of medications bought by the patient
- pointers to other systems that contain information that makes up an electronic prescription and the authority to dispense

Because a data card essentially provides specific answers to definite queries whilst having at the same time a need to optimise the use of memory by avoiding redundancies "high level" Object Modelling Technique (OMT) has been

applied with respect to the definition of healthcare data card data structures.

This draft International standard describes and defines the Identification Data objects used within or referenced by patient held health data cards using UML, plain text and Abstract Syntax Notation (ASN.1).

This draft International Standard does not describe and define the common objects defined within part 2 of this multipart standard even though they are referenced and utilised within this document.

Introductory element — Main element — Part n: Part title

1 Scope

This draft International Standard establishes a common framework for the content and the structure of identification data held on healthcare data cards. This draft International Standard specifies the basic structure of the data, but does not specify particular data-sets for storage on devices.

The detailed functions and mechanisms of the following services are not within the scope of this draft International Standard, (although its structures can accommodate suitable data objects elsewhere specified):

- security functions and related services which are likely to be specified by users for data cards depending on their specific application, for example: confidentiality protection, data integrity protection, and authentication of persons and devices related to these functions;

- access control services which may depend on active use of some data card classes such as microprocessor cards ;

- the initialisation and issuing process (which begins the operating lifetime of an individual data card, and by which the data card is prepared for the data to be subsequently communicated to it according to this draft International Standard).

The following topics are therefore beyond the scope of this Draft International Standard :

- physical or logical solutions for the practical functioning of particular types of data cards ;

- the form which data takes for use outside the data card, or the way in which such data is visibly represented on the data card or elsewhere.

3 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this **part of ISO nnn**. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this **part of ISO nnn** are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ENV 1068:1993

EN 1387

EN 23166:1994

EN 27816-3:1992

EN 28601:1992

ISO 639:1988

ISO 4217:1990

ISO 5218:1977

ISO 6093:1985

ISO 6523:1984
ISO 7498-2:1989
ISO/IEC 8824 : 1990
ISO 8859-1 : 1987
ISO 8908 :1993
ISO/IEC 9594-8 :1990
ISO/IEC 9798-1 : 1991
ISO/IEC 10181-2
Ref UML
REF Code data ISO
CCITT
Recommendation E.163
ISO/IEC 8825 : 1990

4 Terms and definitions

For the purposes of this **part of ISO nnn**, the following terms and definitions apply /the terms and definitions given in ... and the following apply.

4.1

alternative record identifier

An alternative record identifier is an identifier, composed of characters, that is not identical to the major record identifier and is related to the same record person.

asymmetric authentication method

Method for demonstrating knowledge of a secret, in which not all authentication information is shared by both entities.

confidentiality

The property that information is not made available or disclosed to unauthorized individuals, entities or processes. [ISO 7498-2 : 1989].

country

The code that identifies the country of origin of the device issuer.

NOTE : This may not necessarily be the same as the nationality of the device holder.

cryptographic key

Parameter used, in conjunction with an algorithm, for the purposes of validation, authentication, encipherment, or decipherment. [ISO 8908 : 1993].

cryptography

The discipline which embodies principles, means, and methods for the transformation of data in order to hide its information content, prevent its undetected modification and/or prevent its unauthorized use. [ISO 7498-2 : 1989].

data integrity

The property that data has not been altered or destroyed in an unauthorized manner [ISO 7498-2 : 1989].

data object

A data object is a collection of data that has a natural grouping and may be identified as a complete entity.

data origin authentication

The corroboration that the source of data received is as claimed [ISO 7498-2 : 1989].

data sub-object

A data sub-object is a component of a data object that itself may be identified as a discrete entity.

device holder

A device holder is an individual transporting an data card which contains a record with themselves identified as the major record person.

digital signature

Data appended to, or a cryptographic transformation of, a data unit that allows a recipient of the data unit to prove the source and integrity of the data unit and protect against forgery e.g. by the recipient [ISO 7498-2 : 1989].

entity authentication

The corroboration that an entity is the one claimed [ISO/IEC 9798-1 : 1991].

erasure

The process whereby access to a data entity after a given point in time is permanently removed or access denied thereafter to all parties.

NOTE : This may not involve physical removal from the device, and may merely be the result of altering security such that access is permanently denied to all parties.

healthcare data card

A healthcare data card is a card conformant to ISO 7816 intended for use within the healthcare domain.

healthcare person device

An HCP device is designed to provide the function of allowing healthcare persons to have their identity and qualifications acknowledged by the information systems that they use, including informatics and telematics, and if necessary, to sign the transactions that they perform via these systems.

data card application system

An application system that can communicate with an data card.

data card connecting unit

A physical device, which may also contain software elements, that enables communication to take place between an data card and a host.

interface

May be both physical or electrical or logical. A hypothetical junction between an data card and the external environment.

NOTE : This term can be used with a qualifier to describe an attribute to allow data flow to take place over this hypothetical point.

linkage

The ability to join together two or more entities or parts. It may be physical, electrical or relational.

major industry identifier (MII)

The code that identifies the sector/industry within which the data card is intended for use.

major record identifier

The major record identifier is an identifier linked to a primary record relating to a record person within an data card and a given healthcare delivery system.

personal identification number (PIN)

The PIN is a 4 to 12 character alphanumeric code or password the device holder possesses for the purposes of authentication.

record

A record is a collection of data.

record person

A record person is an individual about whom there is an identifiable record containing person related data.

security

The combination of confidentiality, integrity and availability.

soft network

A logical form of linkage in which message sender and recipient are not physically linked and in which message receipt confirmation may not be received by sender.

update

The process whereby information is erased and replaced by new information.

write

The process whereby information is added to the data card.

term

text of the definition

5 Symbols (and abbreviated terms)

ASN.1 Abstract Syntax Notation version 1

CAD Card accepting device

HCP Healthcare person

HCD Healthcare coding scheme designator

ICC Integrated circuit card

ICD Intermittently Connected Device

ICSI International Coding Scheme Identifier

IEC International Electrotechnical Commission

ISO International Organization for Standardization

MII Major Industry Identifier

PIN Personal Identification Number

UML Unified Modeling Language

UTC Coordinated Universal Time

6 Identification Objects

Person Name

The person name allows encoding of a person's name to include an optional title, as well as up to 3 Forenames, up to 2 Surnames and an optional surname suffix. Preference can be specified for surname, and first name. If forenames are unknown initials can be used instead, with up to 3 initials. The general name components are defined as NameElements which are up to 27 characters in length.

Figure 1 shows diagrammatically the structure of the Telecom object. In table 1 the attribute names, data types and multiplicity of fields, together with comments on each field are given. The attribute names used in Table 1 correspond to the formal ASN.1 definitions found in Annex A.

[diagram]

Figure 1 — Structure of Person Name

Table 1 — The specification of individual entities within Person Name

Attribute name	Data type	Multiplicity	Comments
Title	NameElement	0..1	Person's title. Eg. Mr, Mrs, Dr NOTE: Changed from ENV12018 which had OCTET STRING (SIZE(1..7)) to NameElement to allow longer titles such as "Professor Sir", "Herr Doctor Professor"
SurnamePrefix	NameElement	0..1	Surname prefix. Eg. "de" Meyer NOTE: Changed from ENV12018 which had OCTET STRING (SIZE(1..15)) for consistency so that all components are of type NameElement
Surnames	Surname or PreferredSurname	1..2	Surname
Surname	NameElement	-	Component of Surnames
PreferredSurname	NameElement	-	Component of Surnames
SurnameSuffix	NameElement	0..1	Surname suffix. Eg. Junior, III etc.
Forenames	FirstName or PreferredFirstName	1..3	Forenames. Mandatory that there is one forename, can be up to 3 forenames. One forename may be preferred first name. Otherwise preferred first name is presumed to be first FirstName.
FirstName	NameElement	-	Component of Forenames

Attribute name	Data type	Multiplicity	Comments
PreferredFirstName	NameElement	-	Component of Forenames
NameElement	OCTET STRING (SIZE 1..27)	-	Used in Person Name NOTE: Changed from ENV12018 which had 2..27 Change is to allow an initial to be stored in a NameElement when the forename is unknown.

Alignment issues with 13604-4 (PT29):



13604-4 in structured person name (7.11.17) is missing ability to give more than two first names. (One first given name plus one middle name is the limit). 12018 identification is less restrictive and allows three first names.

13604-4 generation qualifier is equivalent to 12018 SurnameSuffix.



Also, but not directly in a structured person name, 12018 provides:



13604-4 in person name details (7.11.12) has person name type (eg alias, maiden name, former name, preferred name etc)

13604-4 in person name details (7.11.12) has period of name validity (the period during which this name is or was valid)

13604-4 in person name details (7.11.12) has unstructured name option (to allow simple textual representation where structure is not known)

Health Care Person

The Health Care Person construct can be used to hold information relating to a HCP, including the HCP's name, the country in which HCP works, professional status, local employment information, relation to a patient, and a HCP unique ID.

Figure 2 shows diagrammatically the structure of the Telecom object. In table 2 the attribute names, data types and multiplicity of fields, together with comments on each field are given. The attribute names used in Table 2 correspond to the formal ASN.1 definitions found in Annex A.

[diagram]

Figure 2 - Structure of Health Care Person

Table 2 — The specification of individual entities within Health Care Person

Attribute name	Data type	Multiplicity	Comments
HCPCountry	Country	1	Country in which HCP works
HCPIdNo	NumericString (SIZE(1..21))	1	Unique ID identifying HCP
HCPName	PersonName	1	HCP's name
HCPRelationCode	CodedData	0..1	This is a code that would indicate the HCPs role to the patient, e.g. Primary responsible General Practitioner, Specialist, Consultant, etc.
HCPClass	Align with TH2	1..*	Type of HCP, e.g. Doctor, Dentist, Pharmacist, Midwife, Nurse, Admin. Professions allied to Medicine, Professions allied to Dentistry, Professions allied to Pharmacy, Professions allied to nursing
HCPProfession	HCPProfCode	0..*	National coding scheme for giving exact definitions of various HCP groups
HCPEmploymentNo	BitString	0..1	Employee number
HCPEmploymentData	CodedData	0..*	Employer specific data relating to the HCP

Telecom object

Telecom object provides can be used to hold contact information for an HCP, to include home and work telephone and fax numbers, and email address. All fields are optional.

Although ENV 12018 allowed for X.400 addresses, it only allowed Internet email addresses under other network address, given the move to internet email systems, a separate field specifically for Internet email address has been added

Figure 3 shows diagrammatically the structure of the Telecom object. In table 3 the attribute names, data types and multiplicity of fields, together with comments on each field are given. The attribute names used in Table 3 correspond to the formal ASN.1 definitions found in Annex A.

[diagram]

Figure 3 - Structure of Telecom object

Table 3 — The specification of individual entities within the Telecom object

Attribute name	Data type	Multiplicity	Comments
TelnoRecPersonHome	Telno	0..1	Person's home phone number
TelnoRecPersonWork	Telno	0..1	Person's work phone number
TelnoRecPersonOther	Telno	0..1	Person's other phone number (eg mobile)
FaxnoRecPersonHome	Telno	0..1	Person's home fax number
FaxnoRecPersonWork	Telno	0..1	Person's work fax number
InternetEmailAddresses	OCTET STRING	0..2	Person's email addresses
X.400address	OCTET STRING	0..1	X.400 email address
OtherNetworkAddresses	OCTET STRING	0..1	Other electronic address (e.g. web URL)
Telno	NUMERIC STRING (SIZE(1..15))	-	Country code, area code, local phone no. Used in TelnoRecPersonHome, etc. Country codes are 1-3 digits, CCITT E.163

Record Persons object

The Record Persons object can be used to store information about relationships between Record Persons.

[diagram]

Figure 4 - Structure of Record Persons object

Table 4 — The specification of individual entities within the Record Persons object

Attribute name	Data type	Multiplicity	Comments
RecordPersons	MajorRecordPerson	1..*	Structure for holding relationships between RecordPerson's.
MajorRecordPerson	Spouse, child, father, mother, otherPerson	1	Relationship and RecordPerson information for related person. Each MajorRecordPerson is one of type spouse, child, father, mother, or otherPerson

Record Person object

The Record Person object can be used to store information identifying an individual for purposes of holding information about relationships between Record Persons.

[diagram]

Figure 5 - Structure of Record Person object

Table 5 — The specification of individual entities within the Record Person object

Attribute name	Data type	Multiplicity	Comments
MajorRecordIdentifier	MajorRecordIdentifier	1	Structured code for Uniquely identifying a person
AlternativeRecordIdentifiers	AlternativeRecordIdentifiers	0..1	Alternative method of identifying a person
RecordIdVerification	RecordIdVerification	1	

Major Record Identifier object

The Major Record Identifier is used to uniquely identifying an object, recording to ensure global uniqueness an MII, issuer country, issuer identifier and record identification number, plus a check digit for integrity check purposes.

[diagram]

Figure 6 - Structure of Major Record Identifier object

Table 6 — The specification of individual entities within the Major Record Identifier object

Attribute name	Data type	Multiplicity	Comments
MII	NUMERIC STRING DEFAULT 80 (SIZE(2))	1	Major Industry Identification. The Healthcare field is represented by value 80 in this scheme.
IssuerCountry	Country	1	A code for the country in which the record was created
IssuerIdentifier	NUMERIC STRING (SIZE(5))	1	A code for the organisation which issued the Record. The organisation codes only need to be unique with in a country, not internationally.
CheckDigit	NUMERIC STRING (SIZE(1))	1	Luhn checksum
RecordIdNumber	EvolRecordIdentifie r	1	History of record

Evolution Record Identifier object

The Evolution Record Identifier is used to provide more record identifiers.

[diagram]

Figure 7 - Structure of Evolution Record Identifier object

Table 7 — The specification of individual entities within the Major Record Identifier object

Attribute name	Data type	Multiplicity	Comments
Evolution1	OCTET STRING (SIZE(1..21))	1	A RecordIdentifier that has free format
Evolution2	OCTET STRING (SIZE(1..21))	1	A RecordIdentifier that has only alphanumeric characters and the separator "/"
Evolution3	OCTET STRING (SIZE(1..21))	1	A RecordIdentifier that is all numeric with no separators

Alternative Record Identifiers object

The Evolution Record Identifier is used to provide more record identifiers.

[diagram]

Figure 8 - Structure of Alternative Record Identifiers object

Table 8 — The specification of individual entities within the Alternative Record Identifiers object

Attribute name	Data type	Multiplicity	Comments
AlternativeRecordIdentifiers			

Miscellaneous objects

These objects are related to identification, but are not referenced by objects defined so far.

Attribute name	Data type	Multiplicity	Comments
PostCode	OCTET STRING (SIZE(1..8))	1	Post code
PostAddr	OCTET STRING (SIZE(1..35))	1	First line of address?
Country	NumericString (SIZE(3))	1	EN 23166 numeric country code
Date	UTCTime (SIZE(6..12))	1	Date and Time (is this Y2k compatible version? DDMMYYhhmmss uses up 12 chars and only has 2 digit year)
Place	OCTET STRING (SIZE(0..15))	1	Location description?

6.1 Subclause (level 1)

6.1.1 Subclause (level 2)

A paragraph.

A **subclause** is a numbered subdivision of a clause. A primary subclause (e.g. 6.1, 6.2, etc.) may be subdivided into secondary subclauses (e.g. 6.1.1, 6.1.2, etc.), and this process of subdivision may be continued as far as the fifth level (e.g. 6.1.1.1.1.1, 6.1.1.1.1.2, etc.).

Subclauses shall be numbered with arabic numerals. Numbers given to the subclauses of an annex shall be preceded by the letter designating that annex followed by a full-stop.

A subclause shall not be created unless there is at least one further subclause at the same level. For example, a piece of text in clause 10 shall not be designated subclause “10.1” unless there is also a subclause “10.2”.

Each primary subclause should preferably be given a title, which shall be placed immediately after its number, on a line separate from the text that follows it. Secondary subclauses may be treated in the same way. Within a clause or subclause, the use of titles shall be uniform for subclauses at the same level, e.g. if 10.1 has a title, 10.2 shall also have a title. In the absence of titles, key terms or phrases (composed in distinctive type) appearing at the beginning of the text of the subclause may be used to call attention to the subject matter dealt with. Such terms or phrases will not be listed in the table of contents.

6.1.1.1 Subclause (level 3)

A paragraph.

6.1.1.1.1 Subclause (level 4)

A paragraph.

6.1.1.1.1.1 Subclause (level 5)

A paragraph.

6.1.1.1.1.2 Subclause (level 5)

A paragraph.

6.1.1.1.2 Subclause (level 4)

A paragraph.

6.1.1.2 Subclause (level 3)

A paragraph.

6.1.2 Subclause (level 2)

A paragraph.

NOTE Note integrated in the text.

Notes integrated in the text of a standard shall only be used for giving additional information intended to assist the understanding or use of the standard and shall not contain provisions to which it is necessary to conform in order to be able to claim compliance with the standard.

These elements should preferably be placed at the end of the clause or subclause, or after the paragraph, to which they refer.

A single note in a clause or subclause shall be preceded by “NOTE”, placed at the beginning of the first line of the text of the note. When several notes occur within the same clause or subclause, they shall be designated “NOTE 1”, “NOTE 2”, “NOTE 3”, etc.

6.2 Subclause (level 1)

A paragraph.

EXAMPLE Example integrated in the text.

Examples integrated in the text of a standard shall only be used for giving additional information intended to assist the understanding or use of the standard and shall not contain provisions to which it is necessary to conform in order to be able to claim compliance with the standard.

These elements should preferably be placed at the end of the clause or subclause, or after the paragraph, to which they refer.

A single example in a clause or subclause shall be preceded by “EXAMPLE”, placed at the beginning of the first line of the text of the example. When several examples occur within the same clause or subclause, they shall be designated “EXAMPLE 1”, “EXAMPLE 2”, “EXAMPLE 3”, etc.

7 Clause

7.1 A level 1 subclause without a title.

A **subclause** is a numbered subdivision of a clause. A primary subclause (e.g. 6.1, 6.2, etc.) may be subdivided into secondary subclauses (e.g. 6.1.1, 6.1.2, etc.), and this process of subdivision may be continued as far as the fifth level (e.g. 6.1.1.1.1.1, 6.1.1.1.1.2, etc.).

Subclauses shall be numbered with arabic numerals. Numbers given to the subclauses of an annex shall be preceded by the letter designating that annex followed by a full-stop.

A subclause shall not be created unless there is at least one further subclause at the same level. For example, a piece of text in clause 10 shall not be designated subclause “10.1” unless there is also a subclause “10.2”.

Each primary subclause should preferably be given a title, which shall be placed immediately after its number, on a line separate from the text that follows it. Secondary subclauses may be treated in the same way. Within a clause or subclause, the use of titles shall be uniform for subclauses at the same level, e.g. if 10.1 has a title, 10.2 shall also have a title. In the absence of titles, key terms or phrases (composed in distinctive type) appearing at the beginning of the text of the subclause may be used to call attention to the subject matter dealt with. Such terms or phrases will not be listed in the table of contents.

7.1.1 A level 2 subclause without a title.

7.1.1.1 A level 3 subclause without a title.

7.1.1.1.1 A level 4 subclause without a title.

7.1.1.1.1.1 A level 5 subclause without a title.

7.1.1.1.1.2 A level 5 subclause without a title.

7.1.1.1.2 A level 4 subclause without a title.

7.1.1.2 A level 3 subclause without a title.

7.1.2 A level 2 subclause without a title.

7.2 A level 1 subclause without a title.

Footnotes to the text give additional information; their use shall be kept to a minimum. They shall not contain requirements.

A paragraph with a footnote¹⁾ and an ordered list:

- a) first list item at level 1 xxxxxxxxxxxx xxxxxxxxxxxxxxxxxxxx xxxxxxxxxxxxxxxxxxxxxxxxxxxx xxxxxxxx xxxxxx
xxxxxxxxxxx xxxxxxxxxxxxxxxxxxxxxxxxxxxx;
- b) second list item at level 1;
 - 1) first list item at level 2;
 - 2) second list item at level 2:
 - first list item at level 3;
 - second list item at level 3 xxxxxxxxxxxx xxxxxxxxxxxxxxxxxxxx xxxxxxxxxxxxxxxxxxxxxxxxxxxx xxxxxxxx
xxxxxx xxxxxxxxxxxx xxxxxxxxxxxxxxxxxxxxxxxxxxxx;
 - third list item at level 3.

Lists may be introduced by a sentence, a complete grammatical proposition followed by a colon, or by the first part of a proposition (without a colon), completed by the items in the list.

Two types of list are commonly used: an ordered list in which each list item is preceded by an item reference; an unordered list in which each list item is preceded by a dash. An ordered list shall be used when it is needed to make reference to individual list items.

Key terms or phrases may be composed in distinctive type to call attention to the subject matter dealt with in the various list items. Such terms or phrases will not be listed in the table of contents; if it is a requirement that they are listed, they shall not be presented as list items but as subclause titles.

Dimensions in millimetres

PLACE FIGURE^a HERE

A paragraph containing a requirement.

NOTE 1 Figure note.

NOTE 2 Figure note.

^a Figure footnote.

Figure 1 — Figure title

1) A footnote to the text.

Figures should be used wherever appropriate to present information in an easily comprehensible form. It shall be possible to refer to each figure explicitly within the text.

One level of subdivision only is permitted [e.g. Figure 1 may be subdivided as a), b), c), etc.].

Figures shall be numbered with arabic numerals, beginning with 1. This numbering shall be independent of the numbering of the clauses and of any tables. A single figure shall be designated "Figure 1". The numbering shall be continuous up to but excluding any annexes. Numbers given to the figures of an annex shall be preceded by the letter designating that annex followed by a full-stop. The numbering shall start afresh with each annex.

The title shall be centred horizontally below the figure and laid out as shown in the preceding example.

Notes to figures shall be treated independently from notes integrated in the text. They shall be located above the title of the relevant figure and shall precede figure footnotes. A single note in a figure shall be preceded by "NOTE", placed at the beginning of the first line of the text of the note. When several notes occur in the same figure, they shall be designated "NOTE 1", "NOTE 2", "NOTE 3", etc. A separate numbering sequence shall be used for each figure.

Notes to figures shall not contain requirements. Any requirements relating to the content of a figure shall be given in the text, in a footnote to the figure or as a paragraph between the figure and its title. It is not necessary that notes to figures are referred to.

Footnotes to figures shall be treated independently from footnotes to the text. They shall be located immediately above the title of the relevant figure, and shall follow figure notes.

Footnotes to figures shall be distinguished by superscript lower-case letters, beginning with "a". The footnotes shall be referred to in the figure by inserting the same superscript lower-case letter.

Footnotes to figures may contain requirements. As a consequence, it is particularly important when drafting the text of the figure footnote to distinguish clearly between different types of provision by using the appropriate verbal forms (see the ISO/IEC Directives, Part 3, 1997, annex E).

Table 1 — Table title

Dimensions in millimetres

a	
A paragraph containing a requirement.	
NOTE 1	Table note.
NOTE 2	Table note.
^a	Table footnote.

Tables should be used wherever appropriate to present information in an easily comprehensible form. It shall be possible to refer to each table explicitly within the text.

A table within a table is not permitted. Subdivision of a table into subsidiary tables is not permitted.

Tables shall be numbered with arabic numerals, beginning with 1. This numbering shall be independent of the numbering of the clauses and of any figures. A single table shall be designated "Table 1". The numbering shall be continuous up to but excluding any annexes. Numbers given to the tables of an annex shall be preceded by the letter designating that annex followed by a full-stop. The numbering shall start afresh with each annex.

The title shall be centred horizontally above the table and laid out as shown in the preceding example.

The first word in the heading of each column shall begin with a capital letter. The units used in a given column shall generally be indicated under the column heading. As an exception to this rule, when all units are the same, a suitable statement shall instead be placed above the right-hand corner of the table, as shown in the preceding example.

The column headings together with any statement concerning units shall be repeated on all pages after the first.

Notes to tables shall be treated independently from notes integrated in the text. They shall be located within the frame of the relevant table and shall precede table footnotes. A single note in a table shall be preceded by “NOTE”, placed at the beginning of the first line of the text of the note. When several notes occur in the same table, they shall be designated “NOTE 1”, “NOTE 2”, “NOTE 3”, etc. A separate numbering sequence shall be used for each table.

Notes to tables shall not contain requirements. Any requirements relating to the content of a table shall be given in the text, in a footnote to the table or as a paragraph within the table. It is not necessary that notes to tables are referred to.

Footnotes to tables shall be treated independently from footnotes to the text. They shall be located within the frame of the relevant table, and shall follow table notes.

Footnotes to tables shall be distinguished by superscript lower-case letters, beginning with “a”. The footnotes shall be referred to in the table by inserting the same superscript lower-case letter.

Footnotes to tables may contain requirements. As a consequence, it is particularly important when drafting the text of the table footnote to distinguish clearly between different types of provision by using the appropriate verbal forms (see the ISO/IEC Directives, Part 3, 1997, annex E).

A paragraph.

$$\frac{a}{b} = c \tag{1}$$

where

- a* is the numerator;
- b* is the denominator;
- c* is the result of the division.

Equations between quantities are preferred to equations between numerical values (see the ISO/IEC Directives, Part 3, 1997, 6.6.9.1). Equations shall be expressed in mathematically correct form, the variables being represented by letter symbols the meanings of which are explained in connection with the equations, unless they appear in a “Symbols and abbreviated terms” clause (see the ISO/IEC Directives, Part 3, 1997, 6.3.2). Descriptive terms or names of quantities shall not be arranged in the form of an equation.

If it is necessary to number some or all of the formulae in a standard in order to facilitate cross-reference, arabic numbers in parentheses shall be used, beginning with 1. The numbering shall be consecutive and independent of the numbering of clauses, tables and figures.

Numbers given to the formulae of an annex shall be preceded by the letter designating that annex followed by a full-stop. The numbering shall start afresh with each annex.

The International System of units (SI) as set out in ISO 31^[4] shall be used. Symbols for quantities shall be chosen, wherever possible, from the various parts of ISO 31 and IEC 60027^[5]. For further guidance on application, see ISO 1000^[6].

The units in which any values are expressed shall be indicated.

The decimal sign shall be a comma on the line in all language versions of International Standards.

For clarity, the symbol \times rather than a point shall be used to indicate multiplication of numbers and numerical values.

If a value less than 1 is written in decimal form, the decimal sign shall be preceded by a zero.

For further information, see the ISO/IEC Directives, Part 3, 1997, 6.6.7 to 6.6.10.

8 Special

A paragraph with an element of text styled as special (in this case a designation):

Throwaway insert ISO xyz-TPGN160308-EN-P20

Use the style **Special** for any element of text for which you are unsure as to the correct style to use, or for which you feel that none of the styles contained in the template is appropriate. Note that if you create your own style(s), they will be mapped to Special on exportation/importation.

Annex A (normative)

Annex title

A.1 General

Annexes shall appear in the order in which they are cited in the text. Each annex shall be designated by a heading comprising the word “Annex” followed by a capital letter designating its serial order, beginning with “A”, e.g. “Annex A”. The annex heading shall be followed by the indication “(normative)” or “(informative)”, and by the title, each on a separate line. Numbers given to the clauses, subclauses, tables, figures and mathematical formulae of an annex shall be preceded by the letter designating that annex followed by a full-stop. The numbering shall start afresh with each annex. A single annex shall be designated “Annex A”.

Normative annexes are integral parts of the standard. Their presence is optional. An annex’s normative status (as opposed to informative) shall be made clear by the way in which it is referred to in the text, by a statement to this effect in the foreword and by an indication in the table of contents and under the heading of the annex.

Informative annexes give additional information intended to assist the understanding or use of the standard and shall not contain provisions to which it is necessary to conform in order to be able to claim compliance with the standard. Their presence is optional. An annex’s informative status (as opposed to normative) shall be made clear by the way in which it is referred to in the text, by a statement to this effect in the foreword and by an indication in the table of contents and under the heading of the annex.

A.2 Clause

A.2.1 Subclause (level 1)

A.2.1.1 Subclause (level 2)

A paragraph.

A.2.1.1.1 Subclause (level 3)

A paragraph.

A.2.1.1.1.1 Subclause (level 4)

A paragraph.

A.2.1.1.1.2 Subclause (level 4)

A paragraph.

A.2.1.1.2 Subclause (level 3)

A paragraph.

A.2.1.2 Subclause (level 2)

A paragraph.

A.2.2 Subclause (level 1)

A paragraph.

A.3 Clause

A.3.1 A level 1 subclause without a title.

A.3.1.1 A level 2 subclause without a title.

A.3.1.1.1 A level 3 subclause without a title.

A.3.1.1.1.1 A level 4 subclause without a title.

A.3.1.1.1.2 A level 4 subclause without a title.

A.3.1.1.2 A level 3 subclause without a title.

A.3.1.2 A level 2 subclause without a title.

A.3.2 A level 1 subclause without a title.

Annex B (informative)

Which styles correspond to which element — Quick reference guide

Element		Style name ^a	
Any element of text for which the correct style to use is not known with certainty or for which no other style of the template is suitable		Special	
Annex	heading, status and title	ANNEX	
Bibliography	reference entry	bibliography	
	title	zzBiblio	
Clause	annexes	a2	
	body of document	Heading 1*	
Definition		Definition	
Displayed mathematical and chemical formulae		Formula	
Example		Example	
Figure	footnote	Figure footnote	
	note	Note	
	title	Figure title	
Figure footnote		Figure footnote	
Footnote	reference	Footnote Reference*	
	text	Footnote Text*	
Footnote text		Footnote Text*	
Foreword	text	Foreword	
	title	zzForeword	
Index	entry	Index 1*	
	entry heading	Index Heading*	
	“Index” title	zzIndex	
Introduction	text	Normal*	
	title	Introduction	
List	ordered	level 1	List Number*
		level 2	List Number 2*
		level 3	List Number 3*
		level 4	List Number 4*
	unordered	level 1	List Continue*
		level 2	List Continue 2*
		level 3	List Continue 3*
		level 4	List Continue 4*
Normative reference	cross-reference to a normative reference defined in the “Normative references” clause	ExtXref	
	in “Normative references” clause	RefNorm	
Note integrated in text, figures and tables		Note	
Paragraph		Normal*	

Element		Style name ^a	
Subclause without title	level 1	p2	
	level 2	p3	
	level 3	p4	
	level 4	p5	
	level 5	p6	
Subclause with title	annexes	level 1	a 2
		level 2	a 3
		level 3	a 4
		level 4	a 5
	body of text	level 1	Heading 2*
		level 2	Heading 3*
		level 3	Heading 4*
		level 4	Heading 5*
		level 5	Heading 6*
	Table	note	Note
table footnote		See Table footnote.	
text		Body text*	
text of a big table		Body Text 2	
text of a very big table		Body Text 3	
title		Table title	
Table footnote	identification letter of the table footnote	TableFootNoteXref	
	reference	TableFootNoteXref	
	text	Table footnote	
Table of contents	“Contents” title	zzContents	
	entries	level 1	TOC 1*
		level 2	TOC 2*
		level 3	TOC 3*
		level 4	TOC 4*
		level 5	TOC 5*
		level 6	TOC 6*
unnumbered elements	TOC 9*		
Term	cross-reference to a term defined in the “Terms and definitions” clause	Defterms	
	in the “Terms and definitions” clause in a terminology document	Term(s)	
	reference number	TermNum	
^a Style names marked with an asterisk are based on predefined Microsoft styles. These styles are recognized by the various linguistic versions of Word and their names will be translated automatically into the language of the Word version which you are using. For these Microsoft styles, the user will need to derive the correspondence between the name displayed and that given in this table; for example, if the same document is opened using English and French versions of Word, text styled “Footnote Reference” in the English version is called “Appel de note” in the French version.			

Bibliography

- [1] ISO/IEC TR 10000-1, *Information technology — Framework and taxonomy of International Standardized Profiles — Part 1: General principles and documentation framework*.
- [2] ISO/IEC Directives, Part 3, *Rules for the structure and drafting of International Standards*, 1997.
- [3] ISO 10241, *International terminology standards — Preparation and layout*.
- [4] ISO 31 (all parts), *Quantities and units*.
- [5] IEC 60027 (all parts), *Letter symbols to be used in electrical technology*.
- [6] ISO 1000, *SI units and recommendations for the use of their multiples and of certain other units*.
- [7] ISO 690, *Documentation — Bibliographic references — Content, form and structure*.

A **Bibliography**, if present, shall appear after the last annex. The drafting rules set out in ISO 690^[7] shall be followed.

The bibliography may include

- documents that are not publicly available,
- documents to which only informative reference is made, and
- documents which have merely served as references in the preparation of the standard.