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Information technology — Automatic identification and data capture (AIDC) techniques — Harmonized vocabulary —

Part 1:
General terms relating to AIDC

Technologies de l'information — Techniques automatiques d'identification et de saisie de données (AIDC) — Vocabulaire harmonisé —

Partie 1: Termes généraux relatifs à l'AIDC

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Foreword

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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.

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ISO/IEC 19762-1 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 31, *Automatic identification and data capture techniques*.

This second edition cancels and replaces the first edition (ISO/IEC 19762-1:2005), which has been technically revised.

ISO/IEC 19762 consists of the following parts, under the general title *Information technology — Automatic identification and data capture (AIDC) techniques — Harmonized vocabulary*:

— *Part 1: General terms relating to AIDC*

— *Part 2: Optically readable media (ORM)*

— *Part 3: Radio frequency identification (RFID)*

— *Part 4: General terms relating to radio communications*

— *Part 5: Locating systems*

Introduction

ISO/IEC 19762 is intended to facilitate international communication in information technology, specifically in the area of automatic identification and data capture (AIDC) techniques. It provides a listing of terms and definitions used across multiple AIDC techniques.

Abbreviations used within each part of ISO/IEC 19762 and an index of all definitions used within each part of ISO/IEC 19762 are found at the end of the relevant part.

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Information technology — Automatic identification and data capture (AIDC) techniques — Harmonized vocabulary —

Part 1:
General terms relating to AIDC

1   Scope

This part of ISO/IEC 19762 provides general terms and definitions in the area of automatic identification and data capture techniques on which are based further specialized sections in various technical fields, as well as the essential terms to be used by non-specialist users in communication with specialists in automatic identification and data capture techniques.

2   Classification of entries

The numbering system employed within ISO/IEC 19762 is in the format nn.nn.nnn, in which the first two numbers (**nn**.nn.nnn) represent the "Top Level" reflecting whether the term is related to 01 = common to all AIDC techniques, 02 = common to all optically readable media, 03 = linear bar code symbols, 04 = two-dimensional symbols, 05 = radio frequency identification, 06 = general terms relating to radio, 07 = real time locating systems, and 08 = MIIM. The second two numbers (nn.**nn**.nnn) represent the "Mid Level" reflecting whether the term is related to 01 = basic concepts/data, 02 = technical features, 03 = symbology, 04 = hardware, and 05 = applications. The third two or three numbers (nn.nn.**nnn**) represent the "Fine" reflecting a sequence of terms.

The numbering in this part of ISO/IEC 19762 employs "Top Level" numbers (nn.nn.nnn) of 01.

3   Terms and definitions

01.01.01
data
reinterpretable representation of information in a formalized manner suitable for communication, interpretation, or processing

cf. **information**

[ISO/IEC 2382-1:1993, 01.01.02]

NOTE 1   **Data** can be processed by humans or by automatic means.

NOTE 2   **Data** can be in the form of numbers and characters for example, to which meaning may be ascribed.

01.01.02
information
⟨information processing⟩ knowledge concerning objects that within a certain context has a particular meaning

NOTE 1   Facts, events, things, processes, and ideas, including concepts, are examples of objects.

NOTE 2   Information is something that is meaningful. **Data** may be regarded as information once it's meaning is revealed.

[ISO/IEC 2382-1:1993, 01.01.01]

01.01.03
bit
binary digit
either of the digits 0 or 1 when used in the binary numeration system

01.01.04
information bit
bit used for the representation of user **data**, rather than for control purposes

01.01.05
least significant bit
LSB
bit with the lowest binary value in a group of matching bits

NOTE   A **byte** is an example of a group of matching bits.

01.01.06
most significant bit
MSB
bit with the highest binary value in a group of matching bits

NOTE   A **byte** is an example of a group of matching bits.

01.01.07
byte(1)
string that consists of a number of bits, treated as a unit, and usually representing a character or a part of a character

[ISO/IEC 2382-4:1999, 04.05.08]

01.01.08
byte(2)
sequential series of bits comprising one character and handled as one unit

NOTE 1   The number of bits in a byte is fixed for a given **data** processing system.

NOTE 2   The number of bits in a byte is usually 8.

NOTE 3   A byte is often eight logical **data** bits, but may include **error detection** or correction bits.

[ISO/IEC 2382-16, 16.04.13]

NOTE 4   A measure of the transmission capability of a communication **channel** expressed in bits.s-1 and related to channel **bandwidth** and signal to **noise** ratio by the Shannon equation: Capacity, $C = B \log_2 (1 + S/N)$, where B is the bandwidth and S/N the signal to noise ratio.

01.01.09
hexadecimal, noun
Hex
method of representing **data** to base 16, using the numbers 0 to 9 and the letters A to F

NOTE   Used as a convenient short hand notation for representing 16 and 32 bit **memory** addresses.

EXAMPLE   The number 10 is represented in hexadecimal as 'A'.

01.01.10
hexadecimal, adj.
characterized by a selection choice, or condition that has sixteen possible different values or states, such as the hexadecimal digits

01.01.11
character
member of a set of elements used by agreement, for the organization, representation or control of information

NOTE   Characters may be letters, digits, punctuation marks or other symbols and, by extension, function controls such as space shift, carriage return or line feed contained in a message.

[IEC 60050-702, 702-05-10]

01.01.12
data character
single **numeric** digit, alphabetic **character** or punctuation mark, or control **character**, which represents information

01.01.13
character set
finite set of characters that is complete for a given purpose

NOTE   ASCII is an example of a character set.

01.01.14
code
collection of rules that maps the elements of a first set onto the elements of a second set

[ISO/IEC 2382-4, 04.02.01]

01.01.15
code element
result of applying a code to an element of a coded set

[ISO/IEC 2382-4, 04.02.04]

01.01.16
coded character set
coded set whose elements are single **characters**

[ISO/IEC 2382-4, 04.02.03]

01.01.17
coded set
set of elements that is mapped onto another set according to a code

01.01.18
numeric
denoting a character set that includes only numbers

cf. **alphanumeric**

01.01.19
alphanumeric
pertaining to **data** that consist of both letters and digits, and may contain other characters such as punctuation marks

01.01.20
digital
pertaining to **data** that consist of digits as well as to processes and functional units that use those **data**

[ISO/IEC 2382-1:1993, 01.02.04]

NOTE 1   Represented in a binary form rather than a continuously varying analogue form.

NOTE 2   In the context of integrated artwork, produced by a number of discrete dots rather than a continuous image.

01.01.21
word(1)
set of characters that usually comprises 8, 16, or 32 bits (as used in computers)

cf. **word(2)**

01.01.22
word(2)
character string or bit string treated as a unit for a given purpose

NOTE   The length of a computer word is defined by the computer architecture, while special characters or control characters delimit the words in text processing.

[ISO/IEC 2382-4, 04.06.01]

01.01.23
read, verb
obtain **data** from an input device, from a storage device, or from a **data** medium

01.01.24
read, noun
process of retrieving **data** from some **machine-readable medium** and, as appropriate, the contention and **error control** management, and channel and source decoding required to recover and communicate the **data** entered at source

01.01.25
write(2)
send **data** to an output device, to a **data** storage device, or to a **data** medium

01.01.26
encode, verb
convert **data** by the use of a code in such a manner that returning to the original form is possible

01.01.27
decode, verb
restore information from its coded representation to the original form

[IEC 60050-702 702-05-14]
[IEC 60050-702 702-09-44]

01.01.28
decoding
process of restoring information from its coded representation to the original form

01.01.29
incorrect read(1)
failure to **read** correctly all or part of the **data** set intended to be retrieved from a **transponder** during **read** or **interrogation** process

01.01.30
incorrect read(2)
condition that exists when the **data** retrieved by the reader/interrogator is different from the corresponding **data** within the machine-readable medium

[ISO/IEC 2382-9, 09.06.09]

01.01.31
misread
condition that exists when the **data** retrieved by the reader/interrogator is different from the corresponding **data** within the transponder

cf. **incorrect read(2)**

01.01.32
data coding
baseband **data** bit representation, or mapping of logical **data** bits to physical signals

01.01.33
data compaction
mechanism or **algorithm** to process the original **data** so that it is represented efficiently in as few code words as possible

01.01.34
data field
defined area of memory assigned to a particular item or items of **data**

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01.01.35
message(1)
unit of **information** transmitted from a source to a destination

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7196387bf64a/iso-iec-19762-1-2008

01.01.36
message(2)
⟨**information theory**; **communication theory**⟩ ordered sequence of characters intended to convey information

01.01.37
record
⟨organization of **data**⟩ set of **data** elements treated as a unit

[ISO/IEC 2382-4:1999, 04.07.03]

01.01.38
file
named set of records treated as a unit

[ISO/IEC 2382-4:1999, 04.07.10]

NOTE   Files are stored within a computer, portable **data** terminal or **information** management system.

01.01.39
tag
⟨hypermedia⟩ language element in a mark-up language used for structuring data text, or objects

EXAMPLES   start-tags and end-tags

01.01.40
semantics
means by which the purpose of a field of **data** is identified

EXAMPLE   The semantic examples used in automatic **data** capture include ISO/IEC 15418/ANS MH10.8.2 **Data** Identifiers, GS1 Application Identifiers, X12/EDIFACT/CII EDI **Data** Element Qualifiers.

01.01.41
syntax
way in which **data** is put together to form messages, including rules governing the use of appropriate identifiers, delimiters, separator character(s), and other non-**data** characters within the message

NOTE   Syntax is the equivalent to grammar in spoken language.

EXAMPLE   The syntactic examples used in automatic **data** capture include ISO/IEC 15434/ANSI MH10.8.3 - Syntax for High Capacity ADC Media.

01.01.42
binary coded decimal
BCD
binary-coded decimal representation
representation of decimal numbers in binary form using a group of four bits to represent an individual digit (0-9)

EXAMPLE   In the binary-coded decimal notation that uses the weights 8-4-2-1, the decimal numeral 23 is represented by 0010 0011 as compared to its representation 10111 in the binary system.

[ISO/IEC 2382-1:1993 01.02.08]

01.01.43
extended binary-coded decimal interchange code
EBCDIC
standard code that consists of 8-bit coded characters

NOTE   Now largely replaced by ASCII.

01.01.44
automatic identification system
system for achieving accurate and unambiguous identification of a **data** bearing label, tag, transponder or a natural/prescribed feature, the **data** or feature being interrogated by means of a system appropriate source

01.01.45
machine-readable medium
characteristic of automatic **data** capture media that permits the direct transfer of **information** from a medium to a **data** processing system, without operator intervention

NOTE   Linear bar code symbols and two-dimensional symbols, magnetic-stripe smart cards, contact memory buttons, radio frequency identification biometrics, and optical character recognition are technologies of machine reading. The **data** is usually contained in pre-defined locations (fields) within a **data** stream. This **data** can be interpreted by a computer program.

01.01.46
eye-readable character
See **human-readable character**

[ISO/IEC 2382-9, 09.01.02]

01.01.47
human-readable information
text that appears with and is associated with a **machine-readable medium**, and is intended to be conveyed to a person

NOTE 1   Human-readable information appears typically on a label (e.g. bar code, two-dimensional symbol, radio frequency tag).

NOTE 2   There are four types of human-readable information:

- human-readable interpretation,
- human translation,
- **data** area titles,
- free text and **data**.

01.01.48
human-readable interpretation
linear bar code or two-dimensional symbol information provided adjacent to a linear bar code, representing the encoded **data** within a symbol

01.01.49
human translation
human-readable information provided within proximity of the **machine-readable medium**, representing portions of the information encoded and **data** field descriptions not encoded in the symbols

01.01.50
data area titles
data areas comprised of information in machine-readable or human-readable form

NOTE   Data areas are identified with the corresponding data area title in human-readable text that may be prefixed, if relevant, by the appropriate identifier.

01.01.51
free text
human-readable information other than what is encoded in the **machine-readable medium**

NOTE 1   This information may be needed by one or more users of the label.

NOTE 2   An example of free text is a product description.

01.01.52
human-readable character
representation of a bar code, **data character**, or **data check character** in a standard eye-readable alphabet or numerals, as distinct from its machine-readable representation

01.01.53
electronic data interchange
EDI
exchange of **data** and documents between computer systems according to standard rules

01.01.54
item(1)
smallest identifiable entity within an application

01.01.55
item(2)
element of a set of **data**

NOTE   Abridged term for **data** item.

EXAMPLE   A **file** may consist of a number of items such as records, which, in turn, may consist of other items.

01.01.56
item(3)
single physical entity or a defined collection of entities having a distinct existence