BSI Standards Publication

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

Part 2: Optically readable media (ORM)

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National foreword

This British Standard is the UK implementation of ISO/IEC 19762-2:2008. It supersedes BS ISO/IEC 19762-2:2005 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee IST/34, Automatic identification and data capture techniques.

A list of organizations represented on this committee can be obtained on request to its secretary.

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# INTERNATIONAL STANDARD

# ISO/IEC 19762-2

Second edition
2008-06-15

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

Part 2:

Optically readable media (ORM)

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

Partie 2: Médias lisibles optiquement (ORM)

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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 19762-2 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 19762-2:2005), 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.

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

## Part 2:
## Optically readable media (ORM)

## 1   Scope

This part of ISO/IEC 19762 provides terms and definitions unique to optically readable media (ORM) in the area of automatic identification and data capture techniques. This glossary of terms enables the communication between non-specialist users and specialists in ORM through a common understanding of basic and advanced concepts.

## 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 02, 03, and 04.

## 3   Terms and definitions

**02.01.01**
**optically readable medium**
**ORM**
member of the set of automatic identification techniques such as a linear bar code, two-dimensional, mark sense, or optical character recognition (OCR) symbols, that are illuminated by a light source and examined by an optical detector that converts the received reflectance into electrical signals that are grouped in a predetermined method, recognized by the reader and converted into the corresponding computer code

**02.01.02**
**symbology**
standard means of representing data in optically machine readable form

NOTE      Each symbology specification sets out its particular rules of composition or symbol architecture.

**02.01.03**
**bar code symbol**
combination of symbol characters and features required by a particular symbology which together form a complete scannable entity

02.01.04

symbol architecture

structure of a bar code symbol

NOTE      See symbology.

02.01.05

bar

dark element corresponding to a region of a scan reflectance profile below the global threshold

02.01.06

quiet zone

area free from interfering markings which must surround a bar code symbol and, in particular, precede the start character and follow the stop character

02.01.07

symbol character

physical representation of the codeword as a pattern of dark and light elements

NOTE      There may be no direct one-to-one mapping between symbol character and data character or auxiliary character. Decoding through the compaction rules is necessary to identify the data.

02.01.08

coded character set

set of single characters that are mapped onto their byte values according to a linear bar code or two dimensional symbology

02.01.09

bar code character See

symbol character.

02.01.10

X dimension

specified width of the narrow elements in a bar code symbol or the specified width of a single element in a two-dimensional symbol

cf. Z dimension

02.01.11

Y dimension

specified height of the elements in a linear bar code symbol or a row in a multi-row symbology

cf. bar height

02.01.12

Z dimension

average achieved width of the narrow elementsin a bar code symbol, equal to half the sum of the average narrow bar width and the average narrow space width in two-width symbologies, or to the quotient of the average overall character width divided by the number of modules per character in modular symbologies

02.01.13

module(1)

⟨linear or multi-row bar code symbology⟩ nominal unit of measure in a symbol character

NOTE      In certain symbologies, element widths may be specified as multiples of one module. Equivalent to X dimension.

02.01.14

element

⟨symbol character or symbol⟩ single bar or space in a bar code symbol or a polygonal or circular single cell in a matrix symbol, which according to symbology rules form a symbol character

NOTE    The width of individual elements may be expressed in modules, or in multiples of the X dimension.

02.01.15

resolution

width of the narrowest element capable of being read by the scanner equipment under test conditions

02.01.16

bar height

dimension of an individual bar in a linear bar code symbol or in a row of a multi-row bar code symbol measured perpendicular to the scanning direction

cf. Y dimension

02.01.17

bar width

transverse dimension of an individual bar in a linear bar code symbol or two-dimensional symbol measured parallel to the scanning direction

NOTE    The number of possible width variations within a particular printed symbol depends on the symbology used.

02.01.18

symbol width

total width of a bar code symbol including the quiet zones

NOTE    Also referred to as symbol length.

02.01.19

symbol aspect ratio

ratio of the symbol height to the symbol width

02.01.20

bar-space sequence

sequence which represents the module widths of the elements of a symbol character

02.01.21

self-checking

property of a symbology whereby a checking algorithm is applied to each character in the code

NOTE    Substitution errors can then only occur if two or more separate printing defects occur within one character. Codes, which are not self-checking usually, have a check character added to the encoded data. Check characters can be added to self-checking symbols to further enhance data integrity.

02.01.22 orientation

pattern

unique spatial arrangement of dark and light modules in a symbology used to detect the spatial orientation of the symbol

02.01.23

shift character

symbology character which is used to switch from one code set to another for a single character, or in the case of "double shift" or "triple shift" characters, for two or three characters, respectively, following which data encodation reverts automatically to the code set from which the shift was invoked

02.02.08
regular reflection
reflection in accordance with the laws of geometrical optics, without diffusion

[IEC 50 (845) 845-04-45]

NOTE        Also known as specular reflection.

02.02.09
diffuse reflection
diffusion by reflection in which, on the macroscopic scale, there is no regular reflection
[IEC 50 (845) 845-04-47]

02.02.10
spectral response
sensitivity of a scanner or other device to light of different wavelengths

02.02.11
reflectance difference
difference between the reflectance of light and dark elements of a bar code symbol

02.02.12
show through
property of a substrate that allows underlying markings or materials to affect the reflectance of the substrate

cf. opacity

02.02.13
gloss
propensity of a surface to reflect a proportion of incident light in a specular manner

02.02.14
transmittance(1), $\tau$
ratio of the transmitted radiant or luminous flux to the incident flux for incident radiation of given spectral composition, polarization and geometrical distribution
Unit: 1
[IEC 50 (845) 845-04-59]

02.02.15
transmittance(2)
(optical) density, $D_\tau$
algorithm to base ten of the reciprocal of the transmittance

$$D_\tau = - \log_{10} \tau$$

[IEC 50 (845) 845-04-66]

NOTE        $\tau$ is transmittance.

02.02.16
opacity
property of a substance of preventing light from passing through it

NOTE        Substrate opacity affects show-through from the reverse side of the substrate or any substance underneath it. Ink opacity determines the show through from the substrate.

02.02.17
scan reflectance profile
plot of the variations in reflectance with distance along a scan path through a symbol representing the analogue waveform produced by a device scanning the symbol

02.02.18
densitometer
photometer for measuring reflectance or transmittance optical density

[IEC 50 (845) 845-05-27]

NOTE 1     A densitometer measures the degree to which light is transmitted through or reflected from a material.

NOTE 2     A calibrated photometer compares the transmitted or reflective light with the incident light, and the result may be displayed as percentage reflectance or density.

02.02.19
photometer
instrument for measuring photometric quantities

[IEC 50 (845) 845-05-15]

NOTE     In AIDC techniques, a photometer is used to measure the luminous intensity of light at specified wavelengths.

02.02.20
print contrast signal
PCS
measure of the relative difference between the reflectance of light and dark elements

cf. reflectance difference

NOTE 1     PCS = (RL - RD)/RL, where RL and RD are the reflectance of light and dark elements, respectively.

02.02.21
printability test
test of print quality

02.02.22
defect
lack of, or deficiency in, a characteristic essential in satisfying applicable requirements, that may affect the ability of a functional unit to perform a required function

NOTE     Area of unwanted image usually referred to as spots or voids.

02.02.23
void
area of high reflectance in an area of a bar code symbol which is intended to be of low reflectance

cf. spot

02.02.24
speck See
spot.

02.02.25
spot
ink or dirt mark or other area of low reflectance in an area of a symbol which is intended to be of high reflectance

cf. void

02.02.26

reference decode algorithm

decode algorithm quoted in a symbology specification as the basis for the reference threshold's decodability values

02.02.27

reference threshold

boundary point used by a reference decode algorithm to make a decision as to the measurement of an element or combination of elements

02.02.28

decodability

measurement of relations from combinations of bars and spaces together or alone according the reference decode algorithm

NOTE    The value gives a measurement of how well a bar code symbol can be decoded.

02.04.01

scan(1), noun

single pass of a scanning beam over a symbol or a portion of a symbol

02.04.02

scan(1), verb

systematically examine data

02.04.03

scan(2), noun

single image capture with an image capture device

02.04.04

scanner

optical device that converts optical information (e.g. a printed bar code or two dimensional symbol) into electrical signals for subsequent decoding and transmission to a computer

02.04.05

bar code reader

device used to capture the data encoded in a bar code symbol, consisting of two parts:

a)   the scanner, an input device which sends signals proportional to the reflectivity of each successive element of the symbol to the decoder;

b)   the decoder, which examines the signals from the scanner and translates them into recognizable or computer-compatible data

NOTE    The decoder itself is sometimes erroneously called a reader.

02.04.06

read rate

percentage representing the number of good reads per 100 attempts to read a particular symbol

02.04.07

contact scanner

particular type of scanner in which the scanning action takes place with the scanner in actual or near contact with the symbol

EXAMPLES    wand, light pen

02.04.08
wand
pen-shaped object that includes a graphics tablet's stylus but most commonly refers to the scanning mechanism used with many bar code readers

02.04.09
aperture
effective opening in an optical system that establishes the field of view

02.04.10
effective aperture
apparent field of view of a scanner or similar device determined by the smaller of the spot size and the physical aperture of the scanner for reception of reflected light

02.04.11
single line (beam) scanner
scanner in which the light beam traverses a single path, giving a one-dimensional field of view

02.04.12
slot reader
bar code reader which requires that the bar-code material be drawn through a slot into which a near-contact bar code reader is built

NOTE    The device requires that the bar code symbol be in a fixed location relative to the edge of a thin substrate.

02.04.13
charge-coupled device
CCD
electronic light-sensitive component used in a linear or two-dimensional array as the light-collecting element in certain types of bar code reader

02.04.14
helium neon laser
type of laser commonly used in bar code scanners that emits visible coherent red light at a wavelength of 632,8 nm

02.04.15
moving beam scanner
scanning device in which the scanning beam is swept by mechanical or electronic means

02.04.16
fixed beam scanner
scanning device in which the beam of light is emitted in a fixed direction, relying on movement of the bar code symbol relative to the beam to achieve the scanning action

02.04.17
raster scanner
moving beam scanner which emits several parallel scanning beams

02.04.18
raster
projection of a laser beam to create multiple, nearly parallel, scan lines instead of a single line

cf. bar code reader

02.04.19
oscillating mirror scanner

single beam scanner with an additional mirror oscillating in a plane at right angles to the scanner beam and causing, for example, a horizontal field of view to be swept up and down vertically

02.04.20
omnidirectional scanner
scanner capable of reading symbols whatever their orientation in a plane parallel or near parallel to the exit
window of the scanner

NOTE        A flat-bed scanner is an example of an omnidirectional scanner.

02.04.21
flat-bed scanner
omnidirectional scanner in which the scanning beam(s) are directed upwards through a window or slot(s)
and over which the bar code symbol is passed

02.04.22
reading angle
one of the three angles characterizing the angular rotation of a symbol in an axis relative to a scan line

NOTE        Reading angles are called tilt, skew and pitch.

02.04.23
orientation
machine-readable medium alignment with respect to the reader expressed in three-dimensional angular
terms, with range of variation expressed in terms of skew, pitch and roll (tilt)

02.04.24
tilt
reading angle, characterizing the rotation of a bar code symbol about an axis perpendicular to the substrate
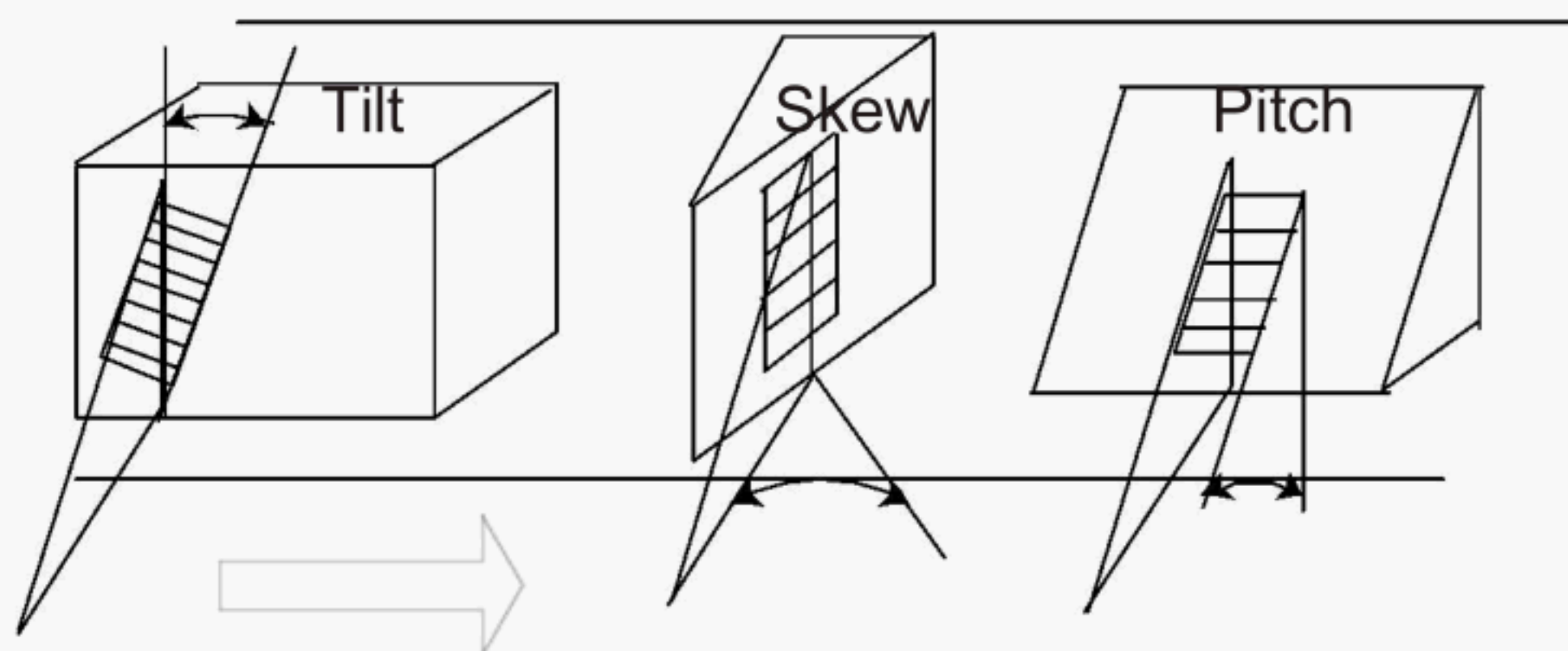
cf. pitch, skew



Figure 1 — Tilt, skew and pitch

02.04.25
skew
reading angle characterizing the rotation of a bar code symbol about an axis parallel to the symbol width

cf. pitch, tilt

02.04.26
pitch
reading angle characterizing the rotation of a bar code symbol about an axis parallel to the bar height

cf. skew, tilt

02.04.27
optical throw
distance from the face of a scanning device to the beginning of the depth of field, for a symbol of given characteristics

cf. depth of field, range, and reading distance

02.04.28 scanning
window
entire area in front of the exit window of a non-contact scanner in which symbols can be read

NOTE        Also known as effective reading zone.

02.04.29
reading distance
distance (or range of distances) from the exit window of a scanner at which the scanner can reliably read a symbol

NOTE        The minimum reading distance is equal to the optical throw and the maximum reading distance is equal to the range of the scanner.

cf. depth of field, optical throw, range

02.04.30
depth of field(1)
range between the minimum and maximum distances from the sensor at which the focused image is acceptably shaped

02.04.31
depth of field(2)
range of distances over which a scanner can reliably read a symbol of given characteristics, whichis equal to the range of the scanner minus its optical throw

cf. optical throw, range, reading distance

02.04.32
field of view
FoV
length of bar code that can be read in one scan

NOTE        For wand scanners and others where the scanner beam has to be manually moved across the symbol, field of view is a function of the operator's ability to scan smoothly.

02.04.33
auto discrimination
ability of a bar code reader to distinguish automatically between two or more symbologies

02.04.34
label printing machine
device for producing bar code labels directly from data

02.04.35
laser engraver
device which uses concentrated heat from a laser beam to engrave graphic images directly on to an item to be marked

02.04.36
overprinting
printing on to pre-printed material

02.04.37
pixel
smallest element of a display surface that can be independently assigned attributes such as colour and intensity

NOTE      Synonymous with picture element.

03.01.01
linear bar code symbol
graphic representation of data in the form of a combination of symbol characters and features required by a particular symbology, which together form a single-row complete scannable entity

NOTE      Features include quiet zones, start and stop characters, data characters, check characters and other auxiliary patterns.

03.01.02
stop character/pattern
auxiliary character, which indicates the end (right hand side) of a bar code symbol

03.01.03
overhead
part of a bar code symbol (consisting of the auxiliary characters and symbol check characters) required in addition to the symbol characters encoding data to give the symbol a valid structure

03.01.04
auxiliary character/pattern
non-data character

EXAMPLES      Start character, stop character, centre pattern, delineator pattern, latch character mode indicator, shift character code subset change characters, and function characters

NOTE      Adapted from ISO/IEC 2382-4.

03.01.05
redundancy
characteristic whereby information is repeated to increase the probability of its being read or communicated successfully

NOTE      In a bar code symbol, the height of the bars provides vertical redundancy by enabling multiple scan paths to exist through the symbol, only one of which is necessary in theory for a complete decode.

03.01.06
vertical redundancy
property of a bar code symbol whereby there exist multiple possible scan paths as a result of the symbol being significantly higher than the height of a single scan line

03.01.07
wide:narrow ratio
ratio of the widths of wider elements in a symbol to those of narrow elements

03.01.08
intercharacter gap
space between the last bar of one symbol character and the first bar of the next in a discrete bar code symbology

03.01.09
two-width symbology
bar code symbology in which symbol characters consist only of narrow and wide elements, the widths of which are in a constant ratio to each other

cf. modular symbology

03.01.10
binary symbology
See two-width symbology

03.01.11
modular symbology
bar code symbology in which symbol characters are composed of elements, the nominal widths of which are integer multiples of the X dimension or module width

cf. module, (n,k) symbology

03.01.12
continuous code
symbology in which there is no intercharacter gap, i.e. the final element of one symbol character abuts the first element of the next symbol character and all the elements carry data

cf. discrete code

03.01.13
discrete code
symbology in which the spaces between symbol characters (intercharacter gaps) do not contain information as each character begins and ends with a bar

cf. continuous code

03.01.14
omnidirectional
in all directions

NOTE      Used to refer to symbols that can be scanned in any orientation with an appropriate scanner, or to such a scanner.

03.02.01
substitution error
character that is wrongly decoded when a bar code symbol is read

cf. misread

03.02.02
symbol check character
symbol character calculated from the other symbol characters in a bar code symbol in accordance with an algorithm defined in the symbology specification and used to check that the bar code has been correctly composed and read

NOTE      The symbol check character does not form part of the data encoded in the symbol.

03.02.03
modulo
type of algorithm used to calculate the check character for certain bar code symbols, the result thereof being the remainder of the division of two integer numbers

NOTE      Usually used in the form Modulo-10, Modulo-103, etc.

03.02.04
guard pattern
auxiliary pattern of bars and spaces corresponding to start or stop patterns in other symbologies, or serving to separate the two halves of a symbol

03.02.05

ladder orientation

position of a bar code symbol in which the axis of the bars is horizontal in order to enable a vertical scanning beam to traverse the complete symbol

cf. picket fence orientation

03.02.06

picket fence orientation

position of a bar code symbol in which the axis of the bars is vertical in order to enable a horizontal scanning beam to traverse the complete symbol

cf. ladder orientation

03.02.07

odd parity

characteristic of the encodation of a symbol character whereby the character contains an odd number of dark modules

03.02.08

even parity

characteristic of the encodation of a symbol character whereby the character contains an even number of dark modules

03.02.09

variable parity encodation

process of encoding additional information in a series of symbol characters by using particular combinations of odd and even parity characters to implicitly encode digits or for checking purposes

03.02.10

fixed parity

characteristic of a bar code symbol or a defined section of a symbol whereby every symbol character has the same parity, either even or odd

03.02.11

bearer bar

bar abutting the tops and bottoms of the bars in a bar code symbol, or a frame surrounding the entire symbol, intended to equalize the pressure exerted by the printing plate over the entire surface of the symbol and/or to prevent a short scan by the bar code reader

03.02.12

short read

reading of an apparently valid shorter symbol within a longer one, of the same or different symbologies

03.02.13

truncation

providing a symbol with normal width but reduced height

03.02.14

bar code density

number of characters that can be represented in a bar code symbol per unit of measure

NOTE 1     Usually expressed as characters per inch or per centimetre for linear bar codes and per square inch or per square centimetre for multi-row symbologies.

NOTE 2     The width of the narrowest bar or space, the wide:narrow ratio, the number of bars and spaces per character and the width of the intercharacter gap, if any, are the controlling factors.

cf. symbol character

03.02.15
characters per inch
CPI
measure of bar code density

03.02.16 symbol
density
See bar code density.

03.02.17
zero-suppression
process of removing zeroes from specified positions in a GTIN-12 in order to encode it in UPC-E format

03.02.18
film master
bar code master on film

03.02.19
bar code master
original film or other image of a linear bar code symbol or two-dimensional symbol produced to close to tolerances and intended for reproduction by conventional printing processes

03.02.20
corner marks
marks which indicate the four corners of a bar code symbol including the light margins on a bar code master

NOTE       Corner marks are not normally printed.

03.02.21
bar width adjustment
BWA
amount of decrease in bar width reduction or increase in bar width increase by which the bars of a bar code master are adjusted to compensate for gain or loss of bar width, respectively, during reprographic and printing processes

03.02.22
bar width compensation
BWC
extent by which the widths of a bar in a bar code master or in a digital bar code file are reduced/increased in order to correct for expected print or image gain/loss

03.02.23
bar width gain/loss
For quality assurance, see bar width adjustment.

03.02.24
bar width increase
For quality assurance, see bar width adjustment.

03.02.25
bar width reduction
For quality assurance, see bar width adjustment.

03.02.26
printability gauge
series of specially calibrated marks printed on to a substrate to assess or monitor the quality of printing

03.02.27
magnification factor
constant multiplier applied to the nominal dimensions of a bar code symbol to obtain the actual dimensions at which it must be produced

03.02.28 integrated
artwork
artwork in which the bar code symbol and the other graphics are generated together by electronic means

03.02.29
add-on symbol
symbol used to encode information supplementary to that in the main symbol

03.02.30
delineator
auxiliary pattern used to separate characters within an add-on symbol

04.02.01
two-dimensional symbol(1)
code representing data in machine-readable form by a collection of polygonal or circular cells in a regular pattern which are read optically by scanning

04.02.02
two-dimensional symbol(2)
2D symbol
optically readable symbol that must be examined both vertically and horizontally to read the entire message.

NOTE        Two-dimensional symbols may be one of two types: matrix symbols and multi-row symbols. Two-dimensional symbols have error detection and may include error correction features.

04.02.03
fixed pattern
unique, non-data portions of a two-dimensional symbology including finder patterns, timing, navigation and other static components

04.02.04
matrix symbology
collection of polygonal or circular elements in a regular pattern to represent data for retrieval by a vision scanning system

04.02.05
dot code
subset of matrix symbologies in which individual modules are surrounded by clear space which has no information content

04.02.06
module(2)
matrix symbology symbol
⟨matrix symbology⟩ single cell or element used to encode one bit of the codeword

04.02.07 alignment
pattern
fixed reference pattern in defined positions in a matrix symbology, which enables the decode software to resynchronize the coordinate mapping of the image modules in the event of moderate amounts of distortion of the image

04.02.08
finder pattern

unique pattern in a symbology used to locate symbols conforming to the symbology rules within a field of view

04.02.09

multi-row symbology

bar code symbology in which the symbol consists of two or more vertically adjacent rows of symbol characters

04.02.10

row

lateral set of components in a multi-row symbology, comprising a start pattern a number of symbol characters, and a stop pattern

04.02.11

column

horizontal symbol character position in a row of a multi-row symbology

04.02.12

stacked symbology

See multi-row symbology.

04.02.13

(n,k) symbology

class of bar code symbologies in which each symbol character is n modules in width and is composed of k bar and space pairs

04.02.14 composite

symbol

linear symbol and two-dimensional symbol combination where the linear symbol can be read by itself or where the linear symbol and 2D symbol are read as a single data message

04.02.15

compaction mode

name given to one of three data compaction algorithms in PDF417 (Text, Numeric and Byte) , which efficiently map 8-bit data bytes into PDF417 codewords

04.02.16 structured

append

linking together in a predetermined sequence of the data contained in two or more symbols, enabling the data to be handled as a single message

04.02.17

data region

part of a symbol used to data code words as opposed to other symbol overhead

04.02.18

data codeword

codeword which encodes data according to one of the compaction schemes of a symbology

04.02.19

error correction codeword

codeword in a symbol which encodes a value derived from the error correction codeword algorithm to enable decode errors to be detected and depending on the error correction level to be corrected

04.02.20

error correction level

degree of error correction capability in a symbology, where this is not fixed but subject to some user choice

04.02.21

erasure

type of error represented by a physically missing character, or a symbol character which has failed to be decoded, as opposed to a substitution error or misdecode

04.02.22
pad character
See filler character in ISO/IEC 19762-1.

04.02.23
pad codeword
codeword that is inserted to extend a codeword sequence, to achieve a desired symbol structure, or to fill the capacity of a symbol

04.02.24
direct part marking
DPM
generic term referring to methods of applying a permanent mark directly onto the surface of an item

04.02.25
intrusive marking
subtractive marking
direct marking method designed to alter a surface to form a human or machine-readable mark

04.02.26
non-intrusive marking
additive marking
direct marking method designed to add material to a surface to form a human- or machine-readable mark

04.02.27
permanent marking
intrusive or non-intrusive markings that are designed to remain legible for at least the normal service life of an item

cf. concatenation in ISO/IEC 19762-1

# 4   Abbreviations

| | |
|---|---|
| ECI | extended channel interpretation |
| DPM | direct part marking |
| BWA | bar width adjustment |
| BWC | bar width compensation |
| CPI | characters per inch |
| PCS | print contrast signal |
| ORM | optically readable medium |
| FoV | field of view |

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| | |
|---|---|
| void | 02.02.23 |
| wand | 02.04.08 |
| wide:narrow ratio | 03.01.07 |
| X dimension | 02.01.10 |
| Y dimension | 02.01.11 |
| Z dimension | 02.01.12 |
| zero-suppression | 03.02.17 |

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