
**Electronic document management —
Vocabulary —**

**Part 1:
Electronic document imaging**

Gestion électronique de documents — Vocabulaire —

Partie 1: Imagerie documentaire électronique





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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.

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

ISO 12651-1 was prepared by Technical Committee ISO/TC 171, *Document management applications*, Subcommittee SC 3, *General issues*.

This first edition of ISO 12651-1, together with ISO 12651-2¹⁾, cancels and replaces ISO 12651:1999.

ISO 12651 consists of the following parts, under the general title *Electronic document management — Vocabulary*:

— *Part 1: Electronic document imaging*

The following parts are under preparation:

— *Part 2: Document workflow*

¹⁾ Under preparation.

Electronic document management — Vocabulary —

Part 1: Electronic document imaging

1 Scope

This part of ISO 12651 is intended to facilitate communication in the field of electronic document management and translation of the terms it contains into other languages.

The term “electronic document management” used throughout this part of ISO 12651 is intended as an all-encompassing term referring to inputting technologies [scanning, indexing, optical character recognition (OCR), forms, digital creation, etc.], management technologies (document services, workflow, and other work management tools), and storage (primarily optical/magnetic) technologies.

All terms and definitions in this part of ISO 12651 have been drafted in accordance with ISO 10241-1 and ISO 1087-1. The selection of terms and the wording of definitions have, as far as possible, followed established usage. Where there were contradictions, solutions agreeable to the majority have been sought.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 11544, *Information technology — Coded representation of picture and audio information — Progressive bi-level image compression*

ISO/IEC 10918-4, *Information technology — Digital compression and coding of continuous-tone still images: Registration of JPEG profiles, SPIFF profiles, SPIFF tags, SPIFF colour spaces, APPn markers, SPIFF compression types and Registration Authorities (REGAUT)*

ISO 18901, *Imaging materials — Processed silver-gelatin-type black-and-white films — Specifications for stability*

3 Principles and conventions

3.1 Definition, formatting and organization of entries

All terms and definitions listed in Clause 4 meet the requirements of ISO 10241-1:2011.

3.2 Spelling

Terms, definitions, examples and notes are given in the spelling preferred in the United Kingdom, unless otherwise indicated. Other correct spellings may be used without violating this International Standard.

4 Terms and definitions

4.1

aberration

defect in a lens or mirror that produces distortions in an **image** (4.67)

EXAMPLES Astigmatism, chromatic aberration, curvature of field.

4.2

ablation

deformation in an **optical disk** (4.99) created by a high-powered laser during write operation, that burns or melts the surface

NOTE This is also known as a pit.

4.3

addressability

number of discrete **pixels** (4.108) that can be addressed using a co-ordinate system on a display or in the devices supporting a display

EXAMPLE $1,600 \times 1,200$.

4.4

analogue monitor

output device that uses an analogue signal to display an **image** (4.67)

NOTE The voltage that determines the brightness of each colour component varies continuously.

4.5

analogue transmission

transmission of continuously varying electronic signals analogous to tonal variations

4.6

analogue-to-digital conversion

A/D

process of converting a continuous electrical current or signal into digital form

4.7

aperture card scanner

device for scanning micro-images in aperture cards

NOTE Some **scanners** (4.124) can also read information printed on the card.

4.8

aspect ratio

ratio of height to width of a rectangle

4.9

automatic character recognition

technology using special systems, such as **OCR** (4.100) or **ICR** (4.80), to identify human-readable characters, usually alphanumeric, and then use the data

4.10

automatic document feeder

powered device to feed microforms, films or paper into a **scanner** (4.124) for capture

NOTE It can also position the microform, film, or paper.

4.11**auxiliary operation**

activity supplementary to the primary operations of a **document** (4.41) management system

EXAMPLES Film cleaning, splicing, mounting, packaging, loading, coding.

4.12**backfile**

collection of **documents** (4.41), usually predating the **imaging** (4.76) system, that have not been digitized

4.13**backfile conversion**

process of scanning, **indexing** (4.77) and quality control of the **backfile** (4.12)

4.14**backward compatibility**

ability to move data from a more advanced version of a system or software package to a less advanced version

4.15**bar-code scanner**

device used to read bar codes by means of reflected light

4.16**bar-code symbol**

machine-generated and readable representation of data, usually numeric, in the form of a printed series of contrasting parallel bars of various widths, spacing and/or heights

4.17**batch processing**

machine processing of a batch of **documents** (4.41)

NOTE The **documents** (4.41) could have been collected over a period of time.

4.18**bit-mapped image**

image (4.67) derived from an array of **pixels** (4.108)

4.19**bitonal image**

image (4.67) having a number of **pixels** (4.108), each of which has an “on” or an “off” value

4.20**bleed-through, US****show-through, GB**

undesired appearance of information from the reverse of a **document** (4.41) when viewed and/or scanned

4.21**blocking**

unintentional adhesion of adjacent sheets of film or paper

4.22**browsing**

searching for information in a database or in a **document** (4.41)

4.23**cache**

temporary storage providing rapid access to frequently used information

4.24

character recognition

identification of graphic characters by automatic means

4.25

CCD scanner

charge-coupled device scanner

scanner (4.124) that incorporates a light-sensitive semiconductor device that can collect, store and move electric charges in packets

4.26

clipped pixel array

actual **pixel** (4.108) array to be imaged as determined by all clipping parameters

4.27

clipping

reduction in the range of tones recorded by a **scanner** (4.124) due to limited spectral sensitivity of its photodetector

4.28

CD-ROM

compact disk-read only memory

optical disk (4.99), conforming to compact disk specifications, created by a mastering process and used for distributing read-only information

4.29

CD-R

compact disk recordable

optical disk (4.99), conforming to compact disk specifications, on which data is recorded by the user once and can be read many times

4.30

compound document

document (4.41) that contains information in more than one object

EXAMPLE Text, graphics and **images** (4.67) in a single **document** (4.41) or a spreadsheet embedded in a word-processing document.

4.31

compression

reduction in size of an electronic file

NOTE 1 Compression can be **lossy** (4.88) or **lossless** (4.87).

NOTE 2 Compression is usually carried out to reduce storage requirements, to reduce network traffic and/or to reduce file transmission times.

4.32

compression ratio

relationship of the file size before **compression** (4.31) to the file size after compression

4.33

COLD

computer output to laser disk

technology used to store computer-generated reports in a computer-based accessible format through the use of virtual printers or other technology, in order to capture the report as it is generated or printed

NOTE This term is sometimes referred to as **enterprise report management** (4.54).

4.34**continuous-tone**

having continuous variation in colour and/or density

NOTE Colour includes shades of grey.

4.35**contrast**

difference in density between darkest and lightest fields

4.36**decompression**

expansion of a compressed file

4.37**deskewing**

process of rotating an **image** (4.67) by the same amount as its skew (slant), but in the opposite direction, resulting in a horizontally and vertically aligned image where the text runs across the page rather than at an angle

NOTE 1 See also **skewing** (4.129).

NOTE 2 Improperly aligned **images** (4.67) make optical character recognition [**OCR** (4.100)] more difficult and can cause the OCR process to become slower and less accurate. Deskewing the **documents** (4.41) beforehand can make the OCR process faster and more accurate.

4.38**digitize**

use of a **scanner** (4.124) to convert **documents** (4.41) to digitally coded **electronic images** (4.48)

4.39**digitizer**

device for the digitization of a **document** (4.41)

NOTE This term is often used, by extension, to refer to a device that allows both the scanning and the actual digitization of the **document** (4.41).

4.40**dithering**

method of simulating shades of grey using different patterns of black and white **pixels** (4.108) within a cell or simulating colours by using patterns of other (often primary) colours

4.41**document**

recorded information or object which can be treated as a unit

[ISO 15489-1:2001, definition 3.10]

4.42**document profile**

set of attributes which specifies the characteristics of a **document** (4.41) as a whole

[ISO/IEC 2382-23:1994, 23.02.02]

4.43**document service**

component, module, or application supporting and/or providing authoring, check-in/check-out, and version control capabilities, along with other features necessary to create, manage, update and secure **document**-based (4.41) information in an automated fashion

4.44

dpi

dots per inch

measure of resolution

4.45

dropout ink

ink of a colour that cannot be detected by a **scanner** (4.124)

4.46

edge enhancement

technique for sharpening the appearance of line edges on an **electronic image** (4.48)

4.47

EDMS

electronic document management system

computer-based application dealing with the management of **documents** (4.41) throughout the **document** (4.41) life cycle

NOTE This may comprise one or more technologies, such as document imaging, document/library services, workflow, enterprise report management, forms management and automatic character recognition.

4.48

electronic image

digital representation of a **document** (4.41)

4.49

electronic image management

coordinated use of all **electronic imaging** (4.51) techniques

4.50

electronic image grey scaling

production of an **electronic image** (4.48) representing the **image** (4.67) contents in shades of grey, converting **continuous-tone** (4.34) images into a limited number of grey shades

4.51

electronic imaging

technique for inputting, recording, processing, storing, transferring and using **images** (4.67)

4.52

enhancement

technique for processing an **image** (4.67) so that the result is visually clearer than the image

4.53

ECM

enterprise content management

strategies, methods and tools used to capture, manage, store, preserve and deliver content and **documents** (4.41) related to organizational processes

NOTE ECM tools and strategies allow management of an organization's unstructured information, wherever that information exists.

4.54

enterprise report management

ERM

technology used to store computer-generated reports in a computer-based accessible format, using virtual printers or other technology to capture the report as it is generated or printed

NOTE See also **COLD** (4.33).

4.55**expunge**

completely remove a **document** (4.41), **image** (4.67) or file and its **indexing** (4.77) from a computer system, leaving no evidence of it ever having appeared in the system

4.56**flat-bed scanner**

device for scanning that has a flat surface for input material

NOTE This is generally used for scanning bound material and other originals unsuitable for **automatic document feeders** (4.10).

4.57**formatting**

setting up the space divisions on a data medium and initiating a space allocation table that will know exactly how to reach each bit of data that could be stored there later

4.58**forms overlay**

printer feature by which a set of standard-form **images** (4.67) can be stored in the printer or computer and selectively overlaid on variable data to be printed in specified locations of the form

4.59**forms removal**

system (usually software) which removes a fixed overlay from a **digitized** (4.38) **image** (4.67), leaving only the variable data

4.60**forward compatibility**

ability to move data from a less advanced version of a system or software package to a more advanced version

4.61**Group 3 (compression)**

form of **compression** (4.31) to the T.4 compression standard in which run-length encoding is used to reduce redundancy

4.62**Group 4 (compression)**

form of **compression** (4.31) to the T.6 compression standard in which run-length encoding is used to reduce redundancy

4.63**halftone**

technique for reproducing **continuous-tone** (4.34) originals as a series of dots by photographing the **image** (4.67) through a hatched screen

NOTE The finer the screen, the greater the detail in the resulting negative.

4.64**horizontal image resolution**

number of discrete elements used to **image** (4.67) the width of the page

4.65**Huffman coding**

data **compression** (4.31) technique that assigns shorter bit sequences to frequently occurring symbols and longer bit sequences to less frequent symbols

4.66

hypertext

system of storing **images** (4.67), text and other computer files that allows direct links to related data

EXAMPLE The best known implementation of hypertext is the World Wide Web (Internet).

NOTE Related data can include text, pictures, sound, video, or programs.

4.67

image

digital or photographic representation of a **document** (4.41)

NOTE 1 See also **electronic image** (4.48).

NOTE 2 A microform can also contain an **image** (4.67) of a **document** (4.41).

4.68

image acceptance sampling

random selection of **document** (4.41) **images** (4.67) from a collection in order to determine acceptability of quality levels of characteristics of the collection

EXAMPLES Quality, **image resolution** (4.73).

4.69

image compression

technique used to reduce the number of bits in an **electronic image** (4.48) file

NOTE See also compression (4.31), lossless compression (4.87), and lossy compression (4.88).

4.70

image conversion

act of converting an **image** (4.67) from one format to another format

4.71

image decompression

technique for restoration of an **electronic image** (4.48) file from its compressed form

4.72

image offset

adjustment device of a **scanner** (4.124) that allows the capture area to be moved relative to the area of information on a **document** (4.41) that is to be captured

4.73

image resolution

number of **pixels** (4.108) per unit of length and width of an **image** (4.67)

NOTE See also vertical image resolution (4.144) and horizontal image resolution (4.64).

4.74

image server

computer on a network that manages **image** (4.67) storage

4.75

image-enabled

electronic imaging (4.51) capabilities through software at any data processing terminal, workstation or microcomputer

4.76**imaging**

process of capturing, storing and retrieving **documents** (4.41), regardless of original format, using micrographics and/or **electronic imaging** (4.51)

NOTE This process is sometimes referred to as **electronic imaging** (4.51).

4.77**index**

list of the contents of a file, **document** (4.41), or collection of documents, with references for locating the contents

4.78**initialisation**

operations required to be carried out before the use of a data medium, the implementation of a process, or the starting of a machine

4.79**input device**

device that converts data into electronic signals for processing on a computer system

EXAMPLES CRT/keyboard, **OCR** (4.100) **scanner** (4.124), mouse.

4.80**intelligent character recognition****ICR**

advanced form of **OCR** (4.100) technology that can include capabilities such as learning fonts during processing, using context to strengthen probabilities of correct recognition, or recognising handprint characters

4.81**International Telecommunication Union (Telecommunication Standardization Sector) ITU-T**

international organization that develops international communications standards

NOTE ITU-T replaces the Consultative Committee for International Telegraph and Telephone (CCITT).

4.82**JBIG****Joint Bi-level Image Group**

«compression» **image compression** (4.69) algorithm specified in ISO 11544

4.83**JPEG****Joint Photographic Experts Group**

«compression» **image compression** (4.69) algorithm specified in ISO 10918-4

NOTE 1 The current version is JPEG 2000.

NOTE 2 JPEG provides both **lossless** (4.87) and **lossy compression** (4.88), both sequential and progressive **compression** (4.31), the choice of arithmetic or **Huffman coding** (4.65) and numerous other factors to optimise compression for a class of **images** (4.67) and uses. JPEG has been designated as the standard for compression of Group 3 colour faxes.

4.84**jukebox**

device for the storage of multiple **optical disks** (4.99) and their automatic selection and transportation to one or more read/write drives

4.85

LE
life expectancy
length of time that information is predicted to be retrievable in a system under appropriate storage conditions, as specified in ISO 18901

NOTE 1 LE designation is the rating for the life expectancy of recording materials and associated retrieval systems.

NOTE 2 The number following the LE symbol is a prediction of the minimum life expectancy in years for which information can be retrieved without significant loss when properly stored under extended-term storage conditions, e.g. LE-100 indicates that information can be retrieved for at least 100 years of storage.

4.86

linearity
measure of actual distance versus computed distance in both the X and Y axes

4.87

lossless compression
technique where the decompressed **image** (4.67) is identical to the original uncompressed image

4.88

lossy compression
any **compression** (4.31) algorithm which loses some of the original information during compression so that the decompressed data is only an approximation of the original

This is especially useful in **image compression** (4.69), where details that are not perceptible, or are minimally perceptible, to the human eye can be eliminated, normally with a dramatic increase in **compression** (4.31).

4.89

magneto-optic recording
MO recording
recording data using a combination of magnetic and optical means to change the polarity of a magnetic field in the recording medium and to achieve high data density

NOTE Data is erasable and/or rewritable.

4.90

master
electronic image (4.48) used to produce duplicates

4.91

mastering process
creation of an **electronic image** (4.48) used to produce duplicates in the media replication process

4.92

media migration
process of converting information stored on one type of media to another

EXAMPLE Conversion from magnetic tape to **optical disk** (4.99).

4.93

microfiche scanner
device for scanning microfiches

4.94

modified Huffman code
MH
MHC
run-length code that removes only horizontal redundancy from an **image** (4.67)

4.95**MMR code****modified modified read code**

two-dimensional digital coding scheme for error-free environments

NOTE This is used in Group 4 **image compression** (4.69).

4.96**MR code****modified read code**

one dimensional digital coding scheme with error recovery used in Group 3 **image compression** (4.69)

4.97**multi-functional optical drive system**

optical disk (4.99) drive which can use both **WORM** (4.145) and rewritable optical media

4.98**nominal capacity**

number of accessible bytes available for electronic data storage on an **optical disk** (4.99) and other recording media

4.99**optical disk**

disk that will accept and retain information in the form of marks in a recording layer that can be read with an optical beam

NOTE Optional spelling "disc" is also acceptable.

4.100**OCR****optical character recognition**

technique where characters are recognised and converted into binary code

NOTE See also intelligent character recognition (4.80).

4.101**ODC****optical disk cartridge**

protective enclosure for an **optical disk** (4.99)

4.102**optical drive**

device for reading from or writing to an optical medium

4.103**optical memory**

medium that will accept and retain information in the form of marks or density modulation in a recording layer and that can be read with an optical beam

4.104**optical storage**

storage system using optical media

4.105**output imaging area**

frame within which an output device can place an **image** (4.67)

On most electronic printing and **imaging** (4.76) devices, this is smaller than the full sheet of paper, resulting in an imaging area smaller than the page size.

4.106

PC recording

phase change recording

technique for recording data on a rewritable medium using a laser to transform between amorphous (formless) and microcrystalline (structured) states, and vice versa

NOTE Such media can be written, erased and rewritten a finite number of times.

4.107

photodiode device

device based on semiconductor technology that detects light

NOTE Arrays of these devices are often used as the detector in **image scanners** (4.124).

4.108

picture element

pixel

pel

smallest element of an **electronic image** (4.48)

NOTE Adapted from ISO/IEC 2382-13:1996, definition 13.03.08.

4.109

pitch

(imaging) radial distance between the colour triads in a monitor

NOTE The closer the colour triads are together, the better the colour looks.

4.110

pitch

(media) nominal centre-to-centre distance between written or groove features on the recording layer of a disk

4.111

pitch

(scanners) horizontal or vertical distance between detector elements in a **scanner** (4.124) detector array

4.112

ppm

pages per minute

number of pages that can feed through a **scanner** (4.124) in one minute

4.113

protective layer

layer on the disk providing physical protection of the recording layer

4.114

recording layer

layer of the disk on which information is recorded during manufacture and/or use

4.115

reporting

listing of information within a database, either in electronic or in printed format

4.116

resolution test chart

chart containing a number of increasingly smaller resolution test patterns

4.117

resolve

distinguish between lines in a test pattern

4.118**resolving power**

numeric expression of the ability of an optical system to distinguish or separate two lines or characters spaced closely together

4.119**rewritable optical disk**

optical disk (4.99) on which data can be repeatedly recorded and erased, and new data recorded

4.120**right-reading**

orientation of text or **images** (4.67) in normal sequence for reading

4.121**roll film scanner**

device for scanning **images** (4.67) from roll microforms

4.122**scan size**

capture size

length and width of the part of a **document** (4.41) that can be **digitized** (4.38) in a **document** (4.41) **imaging** (4.76) system

4.123**scan time**

time required to convert text or graphical information to electronic form

4.124**scanner**

device that electro-optically converts a **document** (4.41) into digital format

4.125**scanner resolution**

number of **pixels** (4.108) or lines per unit length used to scan a **document** (4.41)

4.126**scanner threshold**

level of reflected light that, in a black-and-white **scanner** (4.124), determines whether a point on a **document** (4.41) is recorded as black or white

NOTE This is sometimes set manually (lighter or darker setting), or set automatically based on the average brightness of the **document** (4.41).

4.127**screen resolution**

display resolution

number of **pixels** (4.108) per unit area on a monitor screen

4.128**sheet feeder**

device that automatically inserts cut sheets into another device

4.129**skewing**

error in **document** (4.41) scanning resulting in an **image** (4.67) that appears slanted

4.130**source document**

original **document** (4.41), usually paper-based

4.131

speckle

extraneous dots that appear on an **image** (4.67) of a scanned **document** (4.41)

4.132

TIFF

tagged image file format

image (4.67) file structure that consists of a series of headers or tags plus the image data

4.133

test target

test patterns and/or test elements designed for evaluating the output quality of a **scanner** (4.124)

4.134

thresholding

process by which the **scanner** (4.124) threshold is set

NOTE Photodetectors include photodiodes, CCDs, etc.

4.135

throat

entrance of a **scanner** (4.124) through which **documents** (4.41) are fed

4.136

throughput

in a scanning system, the rate of conversion of hardcopy originals to digital form, usually expressed as pages per minute

4.137

tiling

method of sub-dividing an **electronic image** (4.48) into identically sized, perfectly interlocking regions

NOTE Tiling is often used with large **images** (4.67), such as engineering drawings, so that only a few tiles need to be decompressed and used at one time.

4.138

vector

line for which both direction and length have assigned values

NOTE Vectors can be depicted graphically in two or three dimensions. Magnitude is shown as the length of a line segment. Direction is shown by the orientation of the line segment and by an arrow at one end.

4.139

vector data

digital description of an **image** (4.67) stored as a series of points and mathematical functions to describe the geometric figure

EXAMPLES Line, circle, arc.

4.140

vector data image

image (4.67) stored as a data file containing **vector** (4.138) information

4.141

vector editor

subsystem used to edit a **vector data image** (4.140)

4.142

vectorisation

process of converting alphanumeric characters, lines, drawings or sketches from raster data to **vector** (4.138) data

4.143**vector-to-raster conversion**

conversion of a **vector data image** (4.140) into a raster **image** (4.67)

4.144**vertical image resolution**

number of discrete elements used to **image** (4.67) the length of the page

4.145**WORM****write-once-read-many optical disk**

optical disk (4.99) on which data is recorded once and can be read many times

4.146**zoom**

enlarge the presentation size of information, such as text or **images** (4.67), displayed on a workstation monitor