

SWGFAST

Glossary - Friction Ridge Automation

ARCHIVED

ADIPS

Analog Digital Image-Processing System.

AFIS

Automated Fingerprint Identification System.

ALGORITHM

Mathematical routine used in computer processing, e.g., an AFIS matching algorithm establishes the correlation of Level 2 detail between fingerprints.

ALPS

Automated Latent Print System. The latent print specific operations of an AFIS.

ALS

1. Automated Latent System. The latent print specific operations of an AFIS.
2. Alternate Light Source. Any light source, other than a laser, used to excite luminescence of latent prints, body fluids, etc., at crime scenes or on items of evidence. Now commonly referred to as a forensic light source, which includes lasers.

ANALOG

Image representation by waveform variations, e.g., video tape recordings or silver halide photographs of fingerprints.

ANSI

American National Standards Institute

APIS

Automated Palm Print Identification System. Computerized system for storage, searching and retrieval of known and latent palm print records based on friction ridge detail.

ARTIFACT

1. Any information not present in the original object/image, inadvertently introduced by image capture, processing, compressions, transmission, display or printing.
2. Any distortion or alteration not in the original friction ridge impression.

ASCII

American Standard Code for Information Interchange. A coding system that converts font characters to standard numeric values.

AUTHENTICATION

1. Process used to determine whether a digital image has been altered in any way since its capture.
2. Process used to determine whether an electric file has the correct association, i.e. name, unique identifier, friction ridge images and criminal history record.

BANDWIDTH

The total amount of data that can be transmitted per second, e.g., bandwidth may limit simultaneous high-speed transmission of digital images by multiple users in an AFIS network.

BAUD RATE

Used interchangeably with bits per second (bps), the unit of measure used to rate the speed at which data can be transmitted via computer modem.

BINARY IMAGE

An image type using only two radiometric values, e.g., black and white.

BIOMETRIC FINGERPRINTING

Digital image capture of friction ridges and/or a template from friction ridges.

BMP

Bitmap. A non-compressed image file format. The “.bmp” suffix is used for bitmap file names.

CARD-SCAN

Electronic recording of friction ridge impressions (fingers and/or palms) from fingerprint cards, palm print cards, etc. Sometimes referred to as dead-scan or flat-bed scanner.

CCD

Charged-Coupled Device. An electronic chip capture device used in optical recording instruments which converts light energy into electrical current, e.g., the chip in a digital camera or scanner for capturing friction ridge impressions.

CJIS

Criminal Justice Information Services

CMOS

1. Complementary Metal Oxide Semiconductor. A digital image capture device.
2. A computer operating system.

COMPRESSION

The process of reducing the size of a data file.

COMPRESSION RATE

The ratio of the original file size compared to the compressed file size, e.g., 10 to 1.

COMPRESSION, LOSSLESS

Compression in which no image data is lost and the image can be restored to its original form.

COMPRESSION, LOSSY

Compression in which image data is lost and the image cannot be restored to its original form.

DEF

Direct Electronic Fingerprinting

DIGITAL

Information or data that exists as numerical values.

DIGITAL CAMERA

A camera that records an image electronically as numerical values.

DIGITAL IMAGE PROCESSING

Image display and operations based on numerical pixel values and the application of computer algorithms.

DIRS

Digital Image Retrieval System. Normally an AFIS subsystem, also commonly referred to as IRS.

DOWN SAMPLING

The process of representing an image with a smaller number of samples, also referred to as sub-sampling.

DPI

Dots Per Inch. The printing resolution of an output device. Often referred to incorrectly as PPI (pixels per inch).

EFTS

Electronic Fingerprint Transmission Specifications. Documents prescribing content and format for electronic transactions.

ENCODING

AFIS process used to record minutiae data.

FFT

Fast Fourier Transform. An algorithm used in digital image processing.

FLS

Forensic Light Source. See *ALS*.

GRAY SCALE IMAGE

An image type using more than two radiometric values, i.e., 256 shades of gray in an eight bit image.

IAFIS

Integrated Automated Fingerprint Identification System. The FBI's national AFIS.

INTERPOLATION

A sampling technique used to increase the size of an image file by creating more pixels and increasing the apparent resolution of an image. When used to decrease image size, interpolation is generally referred to as down sampling.

IRS

Image Retrieval System. Normally an AFIS subsystem also commonly referred to as DIRS.

JPEG

Joint Photographic Experts Group. A compressed image file format. The ".jpg" file name extension used for JPEG file names. Most JPEG images use lossy compression.

LT/TP - Latent /Ten Print

AFIS latent print to ten print search process. Sometimes referred to as LI (Latent Inquiry).

LIVE-SCAN

Electronic recording of friction ridges (fingers and/or palms).

LOSSLESS

See *Compression, Lossless*

LOSSY

See *Compressions, Lossy*

NIST

National Institute of Standards and Technology, U.S. Department of Commerce.

PIXEL

Short for picture element. The fundamental element of a digital image.

PPI

Pixels Per Inch. The spatial resolution of a digital image. Often referred to incorrectly as DPI (dots per inch).

RADIOMETRIC RESOLUTION

The number of intensity levels (such as the number of shades of gray or color values) in a digital image.

RUVIS

Reflected Ultra-Violet Imaging System. A system based on the detection and amplification of short-wave UV light (not luminescence) from latent prints.

SCANNER

A capture device used to create digital image files from original objects, photographs, etc.

SPATIAL DENSITY

A measure of the number of pixels in a digital image, e.g., pixels per inch.

SPATIAL RESOLUTION

The relationship of the individual pixels to the size of the actual area represented. This is similar to the relationship of film grain to individual details in a photograph.

SPECTRAL RESOLUTION

The color bands of light detected during image acquisition, e.g., detection from 520 to 700 nanometers.

TEMPLATE

Format of the extracted digital friction ridge detail.

TIFF

Tagged Image File Format. An image file format. The “.tif” extension used for TIFF files. TIFF images can be lossless or lossy.

TWAIN

Technology Without An Important Name. An image acquisition and output protocol commonly used between computers and image capture devices, printers, etc.

WSQ

Wavelet Scalar Quantization. A compression algorithm used to reduce finger or palm print image file size. WSQ uses lossy compression.

Note: See also the imaging definitions in the SWGIT Glossary