



# Scientific Working Group on Digital Evidence

---

## SWGDE Digital & Multimedia Evidence Glossary

### Disclaimer:

As a condition to the use of this document and the information contained therein, the SWGDE requests notification by e-mail before or contemporaneous to the introduction of this document, or any portion thereof, as a marked exhibit offered for or moved into evidence in any judicial, administrative, legislative or adjudicatory hearing or other proceeding (including discovery proceedings) in the United States or any Foreign country. Such notification shall include: 1) The formal name of the proceeding, including docket number or similar identifier; 2) the name and location of the body conducting the hearing or proceeding; 3) subsequent to the use of this document in a formal proceeding please notify SWGDE as to its use and outcome; 4) the name, mailing address (if available) and contact information of the party offering or moving the document into evidence. Notifications should be sent to [secretary@swgde.org](mailto:secretary@swgde.org).

It is the reader's responsibility to ensure they have the most current version of this document. It is recommended that previous versions be archived.

### Redistribution Policy:

SWGDE grants permission for redistribution and use of all publicly posted documents created by SWGDE, provided that the following conditions are met:

1. Redistribution of documents or parts of documents must retain the SWGDE cover page containing the disclaimer.
2. Neither the name of SWGDE nor the names of contributors may be used to endorse or promote products derived from its documents.
3. Any reference or quote from a SWGDE document must include the version number (or create date) of the document and mention if the document is in a draft status.

### Requests for Modification:

SWGDE encourages stakeholder participation in the preparation of documents. Suggestions for modifications are welcome and must be forwarded to the Secretary in writing at [secretary@swgde.org](mailto:secretary@swgde.org). The following information is required as a part of the response:

- a) Submitter's name
- b) Affiliation (agency/organization)
- c) Address
- d) Telephone number and email address
- e) Document title and version number
- f) Change from (note document section number)
- g) Change to (provide suggested text where appropriate; comments not including suggested text will not be considered)
- h) Basis for change



# Scientific Working Group on Digital Evidence

---

## **Intellectual Property:**

Unauthorized use of the SWGDE logo or documents without written permission from SWGDE is a violation of our intellectual property rights.

Individuals may not misstate and/or over represent duties and responsibilities of SWGDE work. This includes claiming oneself as a contributing member without actively participating in SWGDE meetings; claiming oneself as an officer of SWGDE without serving as such; claiming sole authorship of a document; use the SWGDE logo on any material and/or curriculum vitae.

Any mention of specific products within SWGDE documents is for informational purposes only; it does not imply a recommendation or endorsement by SWGDE.

ARCHIVED



# Scientific Working Group on Digital Evidence

---

## Preface

SWGDE provides this Glossary of Terms with general, as well as discipline specific, definitions as they apply across the spectrum of image analysis, computer forensics, video analysis, and forensic audio. Sources are notated within brackets at the end of the definition when that definition came from outside of SWGDE. The following abbreviations will be used throughout this glossary and appear before the definition as applicable:

- (i) – Image Analysis
- (c) – Computer Forensics
- (v) – Video Analysis
- (a) – Forensic Audio

ARCHIVED



# Scientific Working Group on Digital Evidence

---

## **Achievable Resolution**

(i,v) Is a direct measurement of the ability of an imaging system to record detail, typically measured by its ability to maintain separation between close subject elements such as fine lines which are usually stated as 'line pairs or cycles per millimeter'. It is often determined by imaging a resolution test chart. With some imaging systems there may be a slight difference in the horizontal and vertical resolution. If so, the lower of the two values is considered the achievable resolution of the imaging system.

## **Acquisition**

(c) See "Image".

## **Administrative Review**

A procedure used to check casework for consistency with agency/laboratory policy and for editorial practice.

## **Algorithm**

A step-by-step procedure for solving a problem or accomplishing some end. [*Webster's Dictionary*]

## **Analytical Photogrammetry**

A method of photogrammetry in which solutions are obtained by mathematical methods.

## **Archive Copy**

A copy of data placed on media suitable for long-term storage, from which subsequent working copies can be produced.

## **Archive Image**

(i,v) Any image placed on media that is suitable for long-term storage.

(c) A bit stream duplicate of the original data placed on media that is suitable for long-term storage.

## **Archiving**

The process of storing data in a manner suitable for long term availability and retrieval.

## **Artifact**

(a,i,v) A visual/aural aberration in an image, video, or audio recording resulting from a technical or operational limitation. Examples include speckles in a scanned picture or "blocking" in images compressed using the JPEG standard.

(c) Information or data created as a result of the use of an electronic device that shows past activity.

## **Aspect Ratio**

(i,v) The width to height ratio of an image.



# Scientific Working Group on Digital Evidence

---

## **Audio Enhancement**

Processing of recordings for the purpose of increased intelligibility, attenuation of noise, improvement of understanding the recorded material and/or improvement of quality or ease of hearing.

## **Authentication**

The process of substantiating that the data is an accurate representation of what it purports to be.

## **Capture**

The process of recording data, such as an image, video sequence, or audio stream.

## **Capture card/frame grabber**

A piece of computer hardware that accepts an analog or digital signal and outputs the signal as digital data.

## **Capture Device**

A device used in the recording of data.

## **Carve**

(c) The extraction of a portion of data for the purpose of analysis.

## **CD/DVD (compact disc/digital versatile disc)**

Optical disc formats designed to function as digital storage media.

## **Cellular Network Isolation Card (CNIC)**

Identity module card that isolates a device from cellular connectivity. CNIC's do not contain a "cipher key" thus preventing access with a cellular network.

## **Chain of Custody**

The chronological documentation of the movement, location and possession of evidence.

## **Clarification**

(i,v) See "[Image Enhancement](#)".

## **Clean Room/Chamber**

To the extent possible, a limited particulate environment (e.g. requirements would follow ISO 5 or Class 100 standard for air quality).

## **Codec (compressor/decompressor)**

(i,v) A device or program capable of encoding and decoding digital data. Codecs encode a stream or signal for transmission, storage or encryption and decode it for viewing. Codecs are necessary for playback of encoded data. Generally, codecs from DCCTV systems are proprietary.



# Scientific Working Group on Digital Evidence

---

## **Cognitive Image Analysis**

(i,v) The process used to extract visual information from an image.

## **Colorimetry**

The quantification of the color of an object.

## **Color Range**

The range of colors that can be detected by a sensor.

## **Competency Test**

The evaluation of a person's knowledge and ability prior to performing independent work in forensic casework. [ASCLD]

## **Composite Video Signal**

(i,v) An analog signal which contains chroma, video, blanking and sync information and has been combined using one of the coding standards NTSC, PAL, SECAM, etc.

## **Compression**

The process of reducing the size of a data file. (See also, "Lossy Compression" and "Lossless Compression".)

## **Compression ratio**

The size of a data file before compression divided by the file size after compression.

## **Computer Forensics**

A sub-discipline of Digital & Multimedia Evidence, which involves the scientific examination, analysis, and/or evaluation of digital evidence in legal matters.

## **Copy**

An accurate reproduction of information.

## **Data**

Information in analog or digital form that can be transmitted or processed.

## **Data Analysis**

The assessment of the information contained within the media.

## **Data Extraction**

A process that identifies and recovers information that may not be immediately apparent.

## **Data Smear**

(c) The modification of data by a running system during the data acquisition process.



# Scientific Working Group on Digital Evidence

---

## **Deblurring**

(i,v) A type of image restoration used to reverse image degradation, such as motion blur or out-of-focus blur. It is accomplished by applying algorithms based on knowledge or an estimate of the cause of the original degradation.

## **Deinterlacing**

(v) Separating an interlaced frame into two discrete fields.

## **Demonstrative Comparison**

(v) A method of presenting the similarities and/or differences among images and/or objects without rendering an opinion regarding identification or exclusion.

## **Digital CCTV Retrieval**

(v) The process of retrieving video/images from digital CCTV systems.

## **Digital Evidence**

Information of probative value that is stored or transmitted in binary form.

## **Digital Image**

(i) An image that is represented by discrete numerical values organized in a two-dimensional array. [Taken from the "*Encyclopedia of Photography*" 3<sup>rd</sup> Edition] When viewed on a monitor or paper, it appears like a photograph.

(c) See "Image".

## **Directory Listing**

(c) A list of files contained within an object. It may also contain other information such as the size and dates of the files.

## **Downloading/Exporting**

(i,v) The process of retrieving audio, video, and still images and transactional data from a DVR system. Can be in either the native/proprietary format or an open format.

## **Duplicate**

An accurate and complete reproduction of all data objects independent of the physical media.

## **Dynamic Range**

(i) The difference between the brightest highlight and darkest value that a sensor (e.g. film or CCD) can detect and record in a single image.

(a,v) The ratio of the strongest (undistorted) signal to that of the weakest (discernible) signal in a unit or system as expressed in decibels (dB). A way of stating the maximum signal to noise ratio.

## **DVR (Digital Video Recorder)**

(i,v) A stand-alone embedded system or a computer based system used to record video and/or audio data.



# Scientific Working Group on Digital Evidence

---

## **Enhancement**

(i,v) See "Image Enhancement".

(a) See "Audio Enhancement".

## **Erased File Recovery**

(c) The process for recovering deleted files.

## **Extraction**

(c) A method of exporting data from a source (e.g. copying data from EnCase preview, dumping data from a cell phone). See "Data Extraction".

(i,v) See "Downloading/Exporting".

## **Field**

(v) An element of a video signal containing alternate horizontal lines. For interlaced video, the scanning pattern is divided into two sets of spaced lines (odd and even) that are displayed sequentially. Each set of lines is called a field, and the interlaced set of the two sets of lines is a frame.

## **File Format**

The structure by which data is organized in a file.

## **File Slack**

(c) The data between the logical end of a file and the end of the last storage unit for that file.

**Ex:** For the FAT file system, the data between the logical end of the file and the end of the cluster.

## **Fixed Focal Length Lens (Prime Lens)**

(i,v) A lens with a focal length that is not adjustable.

## **Focal Length**

(i,v) Distance from the optical center of a lens to its point of focus at the sensor/image plane when focused at infinity. Smaller focal length values provide a wider field of view; larger focal length values provide a narrower field of view.

## **Forensic**

The use or application of scientific knowledge to a point of law, especially as it applies to the investigation of crime.

## **Forensic Audio**

A subdiscipline of Digital & Multimedia Evidence, which involves the scientific examination, analysis, comparison, and/or evaluation of audio.

## **Forensic Cloning**

The process of creating a bit stream duplicate of the available data from one physical media to another.



# Scientific Working Group on Digital Evidence

---

## **Forensic Image**

(c) See “Image”.

## **Forensic Photogrammetry**

The process of obtaining dimensional information regarding objects and people depicted in an image for legal applications.

## **Forensic Video Analysis**

See “Video Analysis”.

## **Forensic Wipe**

A verifiable procedure for sanitizing a defined area of digital media by overwriting each byte with a known value.

## **Format**

(verb) The process of preparing a hard disk and/or removable media for data storage. This is not a replacement for a forensic wipe.

(noun) The structure by which data is organized on a device.

(v) One or several combined elements that may be used to describe the video recording method. These include tape width (e.g. 8mm, ½ inch, ¾ inch, 1 inch), signal form (e.g. composite, Y/C, component), media (e.g. VHS tape, DVD, CD), data storage type (e.g. analog/digital, AVI/MPEG), and signal standard (e.g. NTSC, PAL, SECAM).

## **Format Conversion**

(a,i,v) To transfer audio and/or video information from one media type to another and/or from one recording method to another.

## **Frame**

(v) Lines of spatial information of a video signal. For interlaced video, a frame consists of two fields, one of odd lines and one of even lines, displayed in sequence. For progressive scan (non-interlaced) video, the frame is written through successive lines that start at the top left of the picture and finish at the bottom right.

## **Free Space**

Data storage areas available for use by the computer. The area may already contain previously stored information. Also referred to as Unallocated Space.

## **Gaussian Blur**

(i,v) A function typically used to reduce image noise and detail using a specific mathematical function known as the “Gaussian Kernel” or “bell-curve”. The visual effect of this technique is a smoothing of image features as if viewing the image through a translucent filter.

## **Geotag**

GPS coordinates added to files as metadata.



# Scientific Working Group on Digital Evidence

---

## **GPX**

GPS exchange format. An XML scheme designed for a common GPS format for software applications.

## **Hash or Hash Value**

Numerical values, generated by hashing functions, used to substantiate the integrity of digital evidence and/or for inclusion /exclusion comparisons against known value sets.

## **Hashing Function**

An established mathematical calculation that generates a numerical value based on input data. This numerical value is referred to as the hash or hash value.

## **Image**

(i,v) An imitation or representation of a person or thing, drawn, painted, photographed, etc.  
(c) A bit stream copy of the available data. The result may be encapsulated in a proprietary format (e.g., E01, 001, etc.).

## **Image Analysis**

The application of image science and domain expertise to examine and interpret the content of an image, the image itself, or both in legal matters.

## **Image Averaging**

(i,v) The process of averaging similar images, such as sequential video frames, to reduce noise in stationary scenes.

## **Image Comparison (Photographic Comparison)**

(i) The process of comparing images of questioned objects or persons to known objects or persons or images thereof, and making an assessment of the correspondence between features in these images for rendering an opinion regarding identification or elimination.

## **Image Content Analysis**

(i) The drawing of conclusions about an image. Targets for content analysis include, but are not limited to: the subjects/objects within an image; the conditions under which, or the process by which, the image was captured or created; the physical aspects of the scene (e.g., lighting or composition); and/or the provenance of the image.

## **Image Data Recovery**

(i) The process of retrieving viewable image(s) from a data set.

## **Image Enhancement**

(i,v) Any process intended to improve the visual appearance of an image or specific features within an image.

## **Image Output**

(i) The means by which an image is presented for examination or observation.



# Scientific Working Group on Digital Evidence

---

## **Image Processing**

(i) Any activity that transforms an input image into an output image.

## **Image Processing Log**

(i) A record of the steps used in the processing of an image.

## **Image Restoration**

See "Restoration".

## **Image Synthesis**

(i,v) Any process that renders an image, using computer graphics techniques, for illustrative purposes (i.e. age progression, facial reconstruction, accident/crime scene reconstruction).

## **Imaging Technology**

(i,v) Any system or method used to capture, store, process, analyze, transmit, or produce an image. Such systems include film, electronic sensors, cameras, video devices, scanners, printers, computers, etc.

## **Image Transmission**

(i,v) The act of moving images from one location to another.

## **Integrity verification**

The process of confirming that the data presented is complete and unaltered since time of acquisition.

## **Intermediate Storage**

Any media or device on which data is temporarily stored for transfer to permanent or archival storage.

## **Interlaced Scan**

(v) A technique of combining two television fields in order to produce a full frame. The two fields are composed of only odd and only even lines, which are displayed one after the other but with the physical position of all the lines interleaving each other, hence interlace. [CCTV, Vlado Damjanovski, Butterworth-Heinemann. 2000]

## **Interpolation**

(i,v) A method of image processing whereby one pixel, block, or frame is displayed or stored based on the differences between the previous and subsequent pixel, block, or frame of information. [Taken from the *Encyclopedia of Photography* 3<sup>rd</sup> Edition] This is often done to increase the apparent clarity of an image.

## **Log File**

A record of actions, events, and related data.



# Scientific Working Group on Digital Evidence

---

## **Logical Acquisition/Copy**

(c) An accurate reproduction of information contained within a logical volume (e.g. mounted volume, logical drive assignment, etc).

## **Lossy Compression**

Compression in which data is lost and cannot be retrieved in its original form.

## **Lossless Compression**

Compression in which no data is lost and all data can be retrieved in its original form.

## **Media**

Objects on which data can be stored.

## **Media Characterization**

The process of inspecting, identifying, and noting the properties of the media.

## **Memory Smear**

(c) The modification of data by a running system during the memory acquisition process.

## **Metadata**

Data, frequently embedded within a file, that describes a file or directory, which can include the locations where the content is stored, dates and times, application specific information, and permissions.

## **Mobile Device**

A portable device that has an embedded system architecture, processing capability, on-board memory, and may have telephony capabilities (e.g., cell phones, tablets, and smartphones).

## **Mobile Phone Forensics**

For legal purposes, the utilization of scientific methodologies to recover data stored by a cellular device.

## **Multiplexer/Demultiplexer**

(v) A device used to combine multiple video signals into a single signal or separate a combined signal. These devices are frequently used in security and law enforcement applications for recording and/or displaying multiple camera images simultaneously or in succession.

## **Multimedia Evidence**

Analog or digital media, including, but not limited to, film, tape, magnetic and optical media, and/or the information contained therein.



# Scientific Working Group on Digital Evidence

---

## **Native File Format**

The original form of a file. A file created with one application can often be read by others, but a file's native format remains the format it was given by the application that created it. In most cases the specific attributes of a file (for example, fonts in a document) can only be changed when it is opened with the program that created it. [*Newton's Telecom Dictionary*]

## **Noise**

(i,v) Variations or disturbances in brightness or color information in an image that do not arise from the scene. Sources of noise include film grain, electronic variations in the input device sensor and circuitry, and stray electromagnetic fields in the signal pathway. It frequently refers to visible artifacts in an image.

## **Nominal Resolution**

(i,v) The numerical value of pixels per inch as opposed to the achievable resolution of the imaging device. In the case of flatbed scanners, it is based on the resolution setting in the software controlling the scanner. In the case of digital cameras, this refers to the number of pixels of the camera sensor divided by the corresponding vertical and horizontal dimension of the area photographed.

## **Normal Lens**

(i,v) A lens designed to approximate the field of view of the human eye without magnification or reduction. The focal length of a normal lens is based on the sensor size in the camera.

## **NTSC**

National Television System Committee also referred to as National Television Standards Committee.

## **NVR (Network Video Recorder)**

A network based surveillance video recording system, typically utilizing Internet Protocol (IP) cameras and Internet connectivity that allows for remote access through a web client or mobile application.

## **Original Image**

(i) An accurate and complete replica of the primary image, irrespective of media. For film and analog video, the primary image is the original image.

## **Original Recording**

(a) The first manifestation of sound in a recoverable stored format.

## **PAL**

Phase Alternation Line. [*European Broadcast Union*]

## **Partition**

User defined section of electronic media.



# Scientific Working Group on Digital Evidence

---

## **Password Recovery**

The process of locating and identifying a series of characters used to restrict access to data.

## **PCB**

Printed Circuit Board. A board used in electronics.

## **Peer Review/Technical Review**

An evaluation conducted by a second qualified individual of reports, notes, data, conclusions, and other documents.

## **Photogrammetry**

The art, science, and technology of obtaining reliable information about physical objects and the environment through the processes of recording, measuring, and interpreting photographic images and patterns of electromagnetic radiant energy and other phenomena. [*The Manual of Photogrammetry*, 4<sup>th</sup> Edition, 1980, ASPRS]

In forensic applications, Photogrammetry, sometimes called “*mensuration*,” most commonly is used to extract dimensional information from images, such as the height of subjects depicted in surveillance images and accident scene reconstruction. Other forensic photogrammetric applications include visibility and spectral analyses. When applied to video, this is sometimes referred to as “videogrammetry”.

## **Photometry**

The measurement of light values of objects in an image.

## **Physical Copy**

(c) An accurate reproduction of information contained on the physical device.

## **Physical Image/Acquisition**

(c) A bitstream duplicate of data contained on a device.

## **Pixel**

Picture element, the smallest component of a picture that can be individually processed in an electronic imaging system [*The Focal Encyclopedia of Photography*, 4th Edition 2007].

## **Playback Optimization**

(a,v) The process of determining the most suitable equipment and settings for analyzing the output signal.

## **Playback**

Recorded material viewed and heard as recorded, facilitated by camcorder, cassette recorder, or other device.

## **Preview**

(c) A sub-process of triage where a cursory review of items is performed to assess the need for collection and/or further examination.



# Scientific Working Group on Digital Evidence

---

## **Primary Image**

(i,v) Refers to the first instance in which an image is recorded onto any media that is a separate, identifiable object. Examples include a digital image recorded on a flash card or a digital image downloaded from the Internet.

## **Processed Image**

(i,v) Any image that has undergone enhancement, restoration or other operation.

## **Production Switcher**

(a,v) A device and/or software used to mix video and/or audio signals from two or more sources (e.g. cameras, videocassette recorder/players, character generators) for dissolves, wipes, and other transition effects.

## **Proficiency Test**

A test to evaluate analysts, technical support personnel, and the quality performance of an agency. *(Four examples are provided)*

1. **Open test** - the analyst(s) and technical support personnel are aware they are being tested.
2. **Blind test** - the analyst(s) and technical support personnel are not aware they are being tested.
3. **Internal test** - conducted by the agency itself.
4. **External test** - conducted by an agency independent of the agency being tested.

## **Progressive Scan**

(v) Display scan pattern where each line of the frame is scanned out sequentially.

## **Proprietary File Format**

Any file format that is unique to a specific manufacturer or product.

## **Quality Assurance**

Planned and systematic actions necessary to provide sufficient confidence that an agency's/laboratory's product or service will satisfy given requirements for quality.

## **Quantitative Image Analysis**

(i,v) The process used to extract measurable data from an image.

## **Reconstruction**

The process of repairing damaged media in order to allow the retrieval of data.

## **Reference Materials**

Refers to items such as published literature, hardware and software documentation, hash sets, header sets, etc.

## **Reliability**

The extent to which information can be depended upon.



# Scientific Working Group on Digital Evidence

---

## **Reproducibility**

The extent to which a process yields the same results on repeated trials.

## **Residue**

(c) Data that is contained in unallocated space or file slack.

(a) The residue of a filtered signal is the algebraic difference between the filter output and its signal input. [*Diamond Cut Users Manual*]

## **Resolution**

(i,v) The act, process, or capability of distinguishing between two separate but adjacent parts or stimuli, such as elements of detail in an image, or similar colors. [Taken from the *Encyclopedia of Photography*, 3<sup>rd</sup> Edition]

## **Resolving Power**

(i,v) See "Achievable Resolution".

## **Restoration**

(i,v) Restoration is any process applied to an image that has been degraded by a known cause (e.g., defocus or motion blur) to partially or totally remove the effects of that degradation.

(c) The process of restoring data from an image.

## **Route**

A series of waypoints.

## **Routing Switcher**

(a,v) A device and/or software used to direct the path of one or more signals into one or more devices.

## **Sharpening**

(i,v) A process used to emphasize edge detail in an image by enhancing the high frequency components.

## **Signature Wiped**

Media that has been securely wiped in accordance with acceptable standards, such as those by NIST, utilizing a sector character signature that is unique.

## **Skimmer**

A magnetic card reader used for illegal purposes.

## **Standard Conversion**

(v) The transformation of one television system signal to another. For example, NTSC to PAL.

## **Source Code**

The list of instructions written in a programming language used to construct a computer program.



# Scientific Working Group on Digital Evidence

---

## **Storage Media**

Any object on which data is preserved.

## **S-Video**

(i,v) A signal in which the luminance and chrominance are separate.

## **Technical/Peer Review**

An evaluation conducted by a second qualified individual of reports, notes, data, conclusions, and other documents.

## **Time-base Corrector (TBC)**

(v) An electronic device used to correct timing inconsistencies and stabilize the playback of the video signal for optimum quality. It also synchronizes video sources allowing image mixing.

## **Timed Expiry**

(v) A feature of DVRs that allows the equipment to adhere to data retention policies that may be mandated in certain parts of the world which results in video data becoming inaccessible after a certain date. This may happen even when the unit is switched off.

## **Time Lapse Video Recording**

(v) Process by which images are recorded at less than the standard rate of frames per second (NTSC – 29.97; PAL – 25.00) thus extending the period of time that can be covered by the storage medium.

## **Timeline Sequence Reconstruction**

The process of relating images, audio, or other data to one another in a chronologically ordered succession.

## **Track Log**

A complete list of trackpoints that a GPS device has created.

## **Trackpoint**

A location automatically created and stored by a GPS device without user interaction as a record of where it has been.

## **Traditional Enhancement Techniques**

(i) Techniques that have direct counterparts in traditional darkrooms. They include brightness & contrast adjustment, color balancing, cropping, and dodging & burning.

## **Transcode**

To convert between formats or encoding methods.

## **Triage**

(c) The process by which items considered for collection or analysis are prioritized to determine the order in which they should be collected and/or analyzed, if at all.



# Scientific Working Group on Digital Evidence

---

## **Trusted Media**

(c) Media of a known state and risk to the examination.

## **Unallocated Space**

(c) Data storage areas available for use by the computer. The area may already contain previously stored information. Also referred to as *Free Space*.

## **Validation**

The process of performing a set of experiments, which establishes the efficacy and reliability of a tool, technique or procedure or modification thereof.

## **Validation Testing**

An evaluation to determine if a tool, technique or procedure functions correctly and as intended.

## **Variable Focal Length Lens (Zoom)**

(i,v) A lens that the focal length can be continuously changed between set limits. It can range from wide angle to telephoto.

## **Vectorscope**

(v) An electronic device that measures a video signal's chrominance (color) performance.

## **Verification**

1. The process of confirming the accuracy of an item to its original.
2. Confirmation that a tool, technique or procedure performs as expected.

## **Video**

The electronic representation of a sequence of images, depicting either stationary or moving scenes. It may include audio.

## **Video Analysis**

The scientific examination, comparison, and/or evaluation of video in legal matters.

## **Video Distribution Amplifier**

(v) A device used to divide single video signals, while boosting their strength for delivery to multiple video devices.

## **Video Enhancement**

Any process intended to improve the visual appearance of video sequences or specific features within video sequences.

## **Video Security Recording System**

One or more cameras connected to a recording device capable of storing analog or digital video information.



# Scientific Working Group on Digital Evidence

---

## **Video Stabilization**

(v) The process of positioning individual frames so that a selected object or person will remain in the same location as the video is played.

## **Waveform Monitor**

(v) An electronic device that provides a graphic display of a video signal.

## **Waypoint**

A location that is stored by a GPS device based on user interaction.

## **Work Copy**

A copy or duplicate of a recording or data that can be used for subsequent processing and/or analysis.

## **WORM (storage)**

Write Once, Read Many. A storage technology that allows media to be written only once but read an unlimited number of times.

## **Write Block/Write Protect**

Hardware and/or software methods of preventing modification of media content.

ARCHIVED



# Scientific Working Group on Digital Evidence

## SWGDE Digital & Multimedia Evidence Glossary

### History

| Revision | Issue Date | Section                                                                                                                                                                                                                                                                                                                                                                          | History                                                                                          |
|----------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| 1.0      | 07/25/2005 |                                                                                                                                                                                                                                                                                                                                                                                  | Original Release created by SWGDE and the Scientific Working Group on Imaging Technology (SWGIT) |
| 2.0      | 01/10/2006 | Added Image Data Recovery (i), Image Content Analysis (i), Digital CCTV Retrieval (v), Demonstrative Comparison (v), Video Stabilization (v)                                                                                                                                                                                                                                     | Revision of document by SWGDE and SWGIT. Revision number change.                                 |
| 2.1      | 06/08/2007 | Updated Demonstrative Comparison (v) definition                                                                                                                                                                                                                                                                                                                                  | Revision of document by SWGIT and SWGDE. Revision number change.                                 |
| 2.2      | 11/1/2007  | Removed definition Digital Image (c), Added Forensic Image (c)                                                                                                                                                                                                                                                                                                                   | Revision of document by SWGIT and SWGDE. Revision number change.                                 |
| 2.3      | 05/22/2009 | Added Aspect Ratio (i,v), Image Restoration (i,v) Sharpening (i,v), Noise (i,v), Deblurring (i,v) Gaussian Blur (i,v), updated Photogrammetry definition, and updated Restoration definition                                                                                                                                                                                     | Revision of document by SWGIT and SWGDE. Revision number change.                                 |
| 2.4      | 01/14/2011 | Added Achievable Resolution definition, Nominal Resolution (i,v), Competency Test, Reference for Peer Review, Forensic Wipe                                                                                                                                                                                                                                                      | Revision of document by SWGIT and SWGDE. Revision number change.                                 |
| 2.5      | 1/13/2012  | Added Format, Timed Expiry and Mobile Phone Forensics definitions, modified logical copy to include logical acquisition, modified physical image to include physical acquisition and deleted the word physical                                                                                                                                                                   | Revision of document by SWGIT and SWGDE. Revision number change.                                 |
| 2.6      | 6/8/2012   | Changed Peer Review to Peer/Technical Review and used same definition as Technical/Peer Review, added Acquisition (c), Extraction (c,i,v), Codec (i,v), Composite Video Signal (i,v), Downloading/Exporting (i,v), DVR (i,v), Enhancement (a,i,v), Fixed Focal Length Lens (i,v), Focal Length (i,v), Normal Lens (i,v), S-Video (i, v), Variable Focal Length Lens (Zoom) (i,v) | Revision of document by SWGIT and SWGDE. Revision number change.                                 |

## SWGDE Digital & Multimedia Evidence Glossary

Version: 3.0 (June 23, 2016)

This document includes a cover page with the SWGDE disclaimer.



# Scientific Working Group on Digital Evidence

| Revision    | Issue Date | Section                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | History                                                                                                                      |
|-------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| 2.7         | 4/8/2013   | Added definitions: Cellular Network Isolation Card (CNIC), Forensic Cloning, Image (c), Pixel, Trusted Media (c), WORM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Revision of document by SWGIT and SWGDE. Revision number change.                                                             |
| 2.8         | 05/27/2015 | Added the following definitions: Clean Room/Chamber, Data Smear, Geotag(s), GPX, Memory Smear, Mobile Device, Original Recording, PCB, Preview, Route, Signature Wiped, Skimmer, Track Log, Trackpoint, Transcode, Triage, Waypoint                                                                                                                                                                                                                                                                                                                                                                                     | Revision of document by SWGIT and SWGDE. Revision number change.                                                             |
| 3.0 – Draft | 02/08/2016 | <p>This document was originally created and released in collaboration with SWGIT and titled, <u>SWGDE/SWGIT Digital &amp; Multimedia Evidence Glossary</u>. This update retitled the document, <u>SWGDE Digital &amp; Multimedia Evidence Glossary</u>, and changed the formatting to match SWGDE formatting.</p> <p>Added the following definitions: Forensic Analytical Photogrammetry, NVR (Network Video Recorder), Photogrammetry, Video Security Recording System</p> <p>Modified the following definitions: Image Analysis, Video Analysis</p> <p>Removed the following definition: Photogrammetric Analysis</p> | <p>Revision of document by SWGDE for Draft for Public Comment.</p> <p>Version number change pending release as Approved.</p> |
| 3.0         | 06/23/2016 | Added term “Forensic Video Analysis” and pointed to existing definition for “Video Analysis”.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SWGDE voted to release as an Approved document.                                                                              |
| 3.0         | 02/11/2026 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Document archived, new revision pending. ARCHIVED watermark added.                                                           |

## SWGDE Digital & Multimedia Evidence Glossary

Version: 3.0 (June 23, 2016)

This document includes a cover page with the SWGDE disclaimer.