

Image formats

257522_PixelRule.tiff ↵

eps;↵EPS

913680_PixelRule_Index.tiff ↵

EPS stands for *Encapsulated PostScript* and is a vector oriented image format. The main thing about EPS is the fact, that images saved in this format can easily be resized. Lines, curves and points are not represented by bitmap information but by vectors. You can imagine an EPS picture as a set of commands that draw the image with geometrical figures.

gif;↵GIF

870140_PixelRule_Index.tiff ↵

GIF is the abbreviation for *Graphics Interchange Format*. The format was created by CompuServe, an international computer networks company, to support quick exchange of image data via the networks. As network time costs a lot of money, the intent of the format was to create as little files as possible. Compression and decoding are designed to allow quick displaying of images. The format is not tied to one single computer system and can store images of 256 colors with a size up to 16,000 x 16,000 pixels. The format reminds a little of the TIFF standard as it also uses Tags to save the format

parameters. Yet there are disadvantages to the GIF standard. The possibility of storing only 256 colors out of about 16.7 millions is hardly up to date.

jpeg;¬JPEG

304945_PixelRule_Index.tiff ¬

JPEG stands for *Joint Photographers Experts Group*. This group of experts has defined a standard compression scheme for still images, called JPEG Compression. Currently the standard is still in draft form, but final versions are to be available very soon.

JPEG compression consists of a series of somewhat complex mathematical operations. Included are color space conversion, discrete cosine transformation, quantization, and Huffman or Arithmetic encoding. The compressed image will use only a fraction of the original space on your mass storage medium.

Decompressing a JPEG will result not quite the same as the original image (JPEG Compression is a lossy compression method). The loss is generally very small, though.

JPEG compression consists of the following steps:

- 1)** The image is converted to a colorspace with separate luminance and chrominance. The luminance information is much more important to the human eye than the chrominance information. Separating them makes it possible to compress the chrominance information more than the luminance information.

2) The resulting information is transformed to the frequency domain using a discrete cosine transformation on 8x8 pixel blocks. 3) Next follows the quantization step. The samples representing high frequencies are generally quantized more than those representing low ones. *This is the step where information is lost.* 4) The quantized data is then compressed using an entropy encoder. This data represents the JPEG Interchange Format and is ready to be stored in a file.

tiff; → TIFF

326587_PixelRule_Index.tiff →

The TIFF (*Tag Image File Format*) standard was defined by Aldus (tm). It contains a wide range of parameters (so-called *Tags*) that make it possible to save almost any kind of image information. The standard is now widely used in computer industry.

As there is a IFD (*Image File Directory*) included in the TIFF standard, it is possible to save more than one image within the same file. TIFFany II is one of the few programs that make use of this feature.

To achieve platform independence the designers of the standard delivered the possibility to save information in the Intel notation (High-Byte first) as well as in the Motorola notation (Low-Byte first).

As there are many Tags that can be combined in many ways it may

happen that there are some strange variations of TIFF images that some programs will not accept. A properly implemented TIFF reader should be able to read any combination, though.