NAME

TIFFReadRGBAImage, TIFFReadRGBAImageOriented − read and decode an image into a fixed-format raster

SYNOPSIS

#include <tiffio.h>

#define TIFFGetR(abgr) ((abgr) & 0xff)
#define TIFFGetG(abgr) (((abgr) >> 8) & 0xff)
#define TIFFGetB(abgr) (((abgr) >> 16) & 0xff)
#define TIFFGetA(abgr) (((abgr) >> 24) & 0xff)

int TIFFReadRGBAImage(TIFF **tif***, uint32** *width***, uint32** *height***, uint32 ****raster***, int** *stopOnError***)**
int TIFFReadRGBAImageOriented(TIFF **tif***, uint32** *width***, uint32** *height***, uint32 ****raster***, int** *orientation***, int** *stopOnError***)**

DESCRIPTION

TIFFReadRGBAImage reads a strip- or tile-based image into memory, storing the result in the user supplied *raster*. The raster is assumed to be an array of *width* times *height* 32-bit entries, where *width* must be less than or equal to the width of the image (*height* may be any non-zero size). If the raster dimensions are smaller than the image, the image data is cropped to the raster bounds. If the raster height is greater than that of the image, then the image data are placed in the lower part of the raster. (Note that the raster is assume to be organized such that the pixel at location (*x*,*y*) is *raster*[*y**width+*x*]; with the raster origin in the lower-left hand corner.)

TIFFReadRGBAImageOriented works like *TIFFReadRGBAImage* with except of that user can specify the raster origin position with the *orientation* parameter. Four orientations supported:

ORIENTATION_TOPLEFT
origin in top-left corner,

ORIENTATION_TOPRIGHT
origin in top-right corner,

ORIENTATION_BOTLEFT
origin in bottom-left corner and

ORIENTATION_BOTRIGHT
origin in bottom-right corner.

If you choose **ORIENTATION_BOTLEFT** result will be the same as returned by the *TIFFReadRGBAImage*.

Raster pixels are 8-bit packed red, green, blue, alpha samples. The macros *TIFFGetR*, *TIFFGetG*, *TIFFGetB*, and *TIFFGetA* should be used to access individual samples. Images without Associated Alpha matting information have a constant Alpha of 1.0 (255).

TIFFReadRGBAImage converts non-8-bit images by scaling sample values. Palette, grayscale, bilevel, CMYK, and YCbCr images are converted to RGB transparently. Raster pixels are returned uncorrected by any colorimetry information present in the directory.

The paramater *stopOnError* specifies how to act if an error is encountered while reading the image. If *stopOnError* is non-zero, then an error will terminate the operation; otherwise *TIFFReadRGBAImage* will continue processing data until all the possible data in the image have been requested.

NOTES

In C++ the *stopOnError* parameter defaults to 0.

Samples must be either 1, 2, 4, 8, or 16 bits. Colorimetric samples/pixel must be either 1, 3, or 4 (i.e. *SamplesPerPixel* minus *ExtraSamples*).

Palettte image colormaps that appear to be incorrectly written as 8-bit values are automatically scaled to 16-bits.

TIFFReadRGBAImage is just a wrapper around the more general *TIFFRGBAImage*(3TIFF) facilities.

RETURN VALUES

1 is returned if the image was successfully read and converted. Otherwise, 0 is returned if an error was encountered and *stopOnError* is zero.

DIAGNOSTICS

All error messages are directed to the *TIFFError*(3TIFF) routine.

Sorry, can not handle %d-bit pictures. The image had *BitsPerSample* other than 1, 2, 4, 8, or 16.

Sorry, can not handle %d-channel images. The image had *SamplesPerPixel* other than 1, 3, or 4.

Missing needed "PhotometricInterpretation" tag. The image did not have a tag that describes how to display the data.

No "PhotometricInterpretation" tag, assuming RGB. The image was missing a tag that describes how to display it, but because it has 3 or 4 samples/pixel, it is assumed to be RGB.

No "PhotometricInterpretation" tag, assuming min-is-black. The image was missing a tag that describes how to display it, but because it has 1 sample/pixel, it is assumed to be a grayscale or bilevel image.

No space for photometric conversion table. There was insufficient memory for a table used to convert image samples to 8-bit RGB.

Missing required "Colormap" tag. A Palette image did not have a required *Colormap* tag.

No space for tile buffer. There was insufficient memory to allocate an i/o buffer.

No space for strip buffer. There was insufficient memory to allocate an i/o buffer.

Can not handle format. The image has a format (combination of *BitsPerSample*, *SamplesPerPixel*, and *PhotometricInterpretation*) that *TIFFReadRGBAImage* can not handle.

No space for B&W mapping table. There was insufficient memory to allocate a table used to map grayscale data to RGB.

No space for Palette mapping table. There was insufficient memory to allocate a table used to map data to 8-bit RGB.

SEE ALSO

TIFFOpen(3TIFF), **TIFFRGBAImage**(3TIFF), **TIFFReadRGBAStrip**(3TIFF), **TIFFReadRG-BATile**(3TIFF), **libtiff**(3TIFF)

Libtiff library home page: **http://www.simplesystems.org/libtiff/**