

## Exiv2 - Feature #1124

### Multi-page tiff image support

03 Oct 2015 19:36 - Robin Mills

<b>Status:</b>	Assigned	<b>Start date:</b>	03 Oct 2015
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>	Robin Mills	<b>% Done:</b>	0%
<b>Category:</b>	tiff parser	<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>	0.28		
<b>Description</b>			
<a href="http://dev.exiv2.org/boards/3/topics/1030">http://dev.exiv2.org/boards/3/topics/1030</a>			

#### History

##### #1 - 05 Oct 2015 06:25 - Andreas Huggel

Below is my answer to a private email I received a few days ago, along the same lines as what Robin said in the forum. Not sure if that email is related to the [latest comment in the forum](#):

Exiv2 doesn't support TIFFs with multiple images (IFDs linked with a next-IFD pointer), that's a limitation of the existing architecture. Historically, Exiv2 first supported Exif in JPEGs which is a TIFF structure that consists of two linked IFDs, the second one for the thumbnail image - so two should actually work, but not three or more.

If you are interested to enhance the Exiv2 library, I may be able to give you some pointers to get you started. It is not a straightforward change though and has not been requested frequently, I don't think this is a feature that anyone from the team is planning to look into soon.

##### #2 - 06 Oct 2015 20:39 - Robin Mills

- *Tracker changed from Bug to Feature*

##### #3 - 28 Oct 2015 18:13 - Robin Mills

- *File multipage\_tif\_example.tif added*

Mikayel Egibyan has spoken to me by private email about this.

The following website discusses multipage tiffs: <http://www.nightprogrammer.org/development/multipage-tiff-example-download-test-image-file/>

Running the command: `exiv2 -pa http://.....tif` reveals nothing, however `exiv2 -pS http://.....tif` reveals a lot of metadata.

```
$ exiv2 -pS http://www.nightprogrammer.org/wp-uploads/2013/02/multipage_tif_example.tif
STRUCTURE OF TIFF FILE (II): http://www.nightprogrammer.org/wp-uploads/2013/02/multipage_tif_example.tif
address | tag | type | count | offset | value
511462 | 0x0100 | ImageWidth | SHORT | 1 | 1903 | 1903
511474 | 0x0101 | ImageLength | SHORT | 1 | 899 | 899
511486 | 0x0102 | BitsPerSample | SHORT | 3 | 511670 | 8 8 8
511498 | 0x0103 | Compression | SHORT | 1 | 7 | 7
511510 | 0x0106 | PhotometricInterpretation | SHORT | 1 | 2 | 2
... lots of stuff deleted ...
$
```

I've attached the multi-page sample tiff as it may come in useful when somebody works on this feature.

##### #4 - 28 Oct 2015 22:33 - Robin Mills

I've found a work around to enable exiv2 to work with multi-page tiffs. Install libtiff and the samples applications tiffsplit and tiffcp.

**tiffsplit** enables you to split a multi-page tiff into separate (single page) tiffs which exiv2 can process:

```
658 rmills@rmillsmbp:~/Downloads $ tiffsplit
LIBTIFF, Version 4.0.4
Copyright (c) 1988-1996 Sam Leffler
Copyright (c) 1991-1996 Silicon Graphics, Inc.

usage: tiffsplit input.tif [prefix]
659 rmills@rmillsmbp:~/Downloads $
```

tiffcp has many features including creating a multi-page tiff from separate tiff files:

```
659 rmills@rmillsmbp:~/Downloads $ tiffcp
LIBTIFF, Version 4.0.4
Copyright (c) 1988-1996 Sam Leffler
Copyright (c) 1991-1996 Silicon Graphics, Inc.
```

```
usage: tiffcp [options] input... output
where options are:
```

```
-a          append to output instead of overwriting
-o offset  set initial directory offset
-p contig  pack samples contiguously (e.g. RGBRGB...)
-p separate store samples separately (e.g. RRR...GGG...BBB...)
-s          write output in strips
-t          write output in tiles
-x          force the merged tiff pages in sequence
-8          write BigTIFF instead of default ClassicTIFF
-B          write big-endian instead of native byte order
-L          write little-endian instead of native byte order
-M          disable use of memory-mapped files
-C          disable strip chopping
-i          ignore read errors
-b file[,#] bias (dark) monochrome image to be subtracted from all others
-,=%       use % rather than , to separate image #'s (per Note below)

-r #       make each strip have no more than # rows
-w #       set output tile width (pixels)
-l #       set output tile length (pixels)
```

```
-f lsb2msb force lsb-to-msb FillOrder for output
-f msb2lsb force msb-to-lsb FillOrder for output
```

```
-c lzw[:opts] compress output with Lempel-Ziv & Welch encoding
-c zip[:opts] compress output with deflate encoding
-c lzma[:opts] compress output with LZMA2 encoding
-c jpeg[:opts] compress output with JPEG encoding
-c jbig       compress output with ISO JBIG encoding
-c packbits  compress output with packbits encoding
-c g3[:opts] compress output with CCITT Group 3 encoding
-c g4        compress output with CCITT Group 4 encoding
-c sgilog    compress output with SGILOG encoding
-c none      use no compression algorithm on output
```

Group 3 options:

```
1d         use default CCITT Group 3 1D-encoding
2d         use optional CCITT Group 3 2D-encoding
fill       byte-align EOL codes
```

For example, `-c g3:2d:fill` to get G3-2D-encoded data with byte-aligned EOLs

JPEG options:

```
#          set compression quality level (0-100, default 75)
r          output color image as RGB rather than YCbCr
```

For example, `-c jpeg:r:50` to get JPEG-encoded RGB data with 50% comp. quality

LZW, Deflate (ZIP) and LZMA2 options:

```
#          set predictor value
p#        set compression level (preset)
```

For example, `-c lzw:2` to get LZW-encoded data with horizontal differencing, `-c zip:3:p9` for Deflate encoding with maximum compression level and floating point predictor.

Note that input filenames may be of the form `filename,x,y,z` where `x`, `y`, and `z` specify image numbers in the filename to copy.

```
example: tiffcp -c none -b esp.tif,1 esp.tif,0 test.tif
         subtract 2nd image in esp.tif from 1st yielding uncompressed result test.tif
660 rmills@rmillsmbp:~/Downloads $
```

I have also found another couple sources for multi-page tiffs:

<http://www.openmicroscopy.org/site/support/ome-model/ome-tiff/data.html>  
[https://bz.apache.org/ooo/show\\_bug.cgi?id=9193](https://bz.apache.org/ooo/show_bug.cgi?id=9193) which references the file: <https://bz.apache.org/ooo/attachment.cgi?id=3581>

The three multipage tiffs have slightly different use of meta with regard to tags `NewSubfileType`, `SubfileType` and `PageNumber`. `libtiff` suffers no pain from this, however should `exiv2` embark on multipage tiffs, it may be wise to only support this when `libtiff` is linked to `exiv2`.

To illustrate this, I'll use the referenced apache file listed above.

Read the metadata in the multi-page tiff:

```
675 rmills@rmillsmbp:~/Downloads $ exiv2 -pS https://bz.apache.org/ooo/attachment.cgi?id=3581
STRUCTURE OF TIFF FILE (II): https://bz.apache.org/ooo/attachment.cgi?id=3581
address | tag | type | count | offset | value
43826 | 0x00fe | NewSubfileType | LONG | 1 | 0 | 0
43838 | 0x0100 | ImageWidth | LONG | 1 | 1728 | 1728
43850 | 0x0101 | ImageLength | LONG | 1 | 2266 | 2266
43862 | 0x0102 | BitsPerSample | SHORT | 1 | 1 | 1
43874 | 0x0103 | Compression | SHORT | 1 | 4 | 4
43886 | 0x0106 | PhotometricInterpretation | SHORT | 1 | 0 | 0
43898 | 0x010a | FillOrder | SHORT | 1 | 2 | 2
43910 | 0x010e | ImageDescription | ASCII | 12 | 8 | Scanned data
43922 | 0x0111 | StripOffsets | LONG | 1 | 20 | 20
43934 | 0x0115 | SamplesPerPixel | SHORT | 1 | 1 | 1
43946 | 0x0116 | RowsPerStrip | SHORT | 1 | 2266 | 2266
43958 | 0x0117 | StripByteCounts | LONG | 1 | 43788 | 43788
43970 | 0x011a | XResolution | RATIONAL | 1 | 43808 | 43808/0
43982 | 0x011b | YResolution | RATIONAL | 1 | 43816 | 43816/0
43994 | 0x0128 | ResolutionUnit | SHORT | 1 | 2 | 2
82636 | 0x00fe | NewSubfileType | LONG | 1 | 0 | 0
82648 | 0x0100 | ImageWidth | LONG | 1 | 1728 | 1728
82660 | 0x0101 | ImageLength | LONG | 1 | 2267 | 2267
82672 | 0x0102 | BitsPerSample | SHORT | 1 | 1 | 1
82684 | 0x0103 | Compression | SHORT | 1 | 4 | 4
82696 | 0x0106 | PhotometricInterpretation | SHORT | 1 | 0 | 0
82708 | 0x010a | FillOrder | SHORT | 1 | 2 | 2
82720 | 0x0111 | StripOffsets | LONG | 1 | 44010 | 44010
82732 | 0x0115 | SamplesPerPixel | SHORT | 1 | 1 | 1
82744 | 0x0116 | RowsPerStrip | SHORT | 1 | 2267 | 2267
82756 | 0x0117 | StripByteCounts | LONG | 1 | 38608 | 38608
82768 | 0x011a | XResolution | RATIONAL | 1 | 82618 | 17082/1
82780 | 0x011b | YResolution | RATIONAL | 1 | 82626 | 17090/1
82792 | 0x0128 | ResolutionUnit | SHORT | 1 | 2 | 2
111042 | 0x00fe | NewSubfileType | LONG | 1 | 0 | 0
111054 | 0x0100 | ImageWidth | LONG | 1 | 1728 | 1728
111066 | 0x0101 | ImageLength | LONG | 1 | 2266 | 2266
111078 | 0x0102 | BitsPerSample | SHORT | 1 | 1 | 1
111090 | 0x0103 | Compression | SHORT | 1 | 4 | 4
111102 | 0x0106 | PhotometricInterpretation | SHORT | 1 | 0 | 0
111114 | 0x010a | FillOrder | SHORT | 1 | 2 | 2
111126 | 0x0111 | StripOffsets | LONG | 1 | 82808 | 82808
111138 | 0x0115 | SamplesPerPixel | SHORT | 1 | 1 | 1
111150 | 0x0116 | RowsPerStrip | SHORT | 1 | 2266 | 2266
111162 | 0x0117 | StripByteCounts | LONG | 1 | 28216 | 28216
111174 | 0x011a | XResolution | RATIONAL | 1 | 111024 | 45488/1
111186 | 0x011b | YResolution | RATIONAL | 1 | 111032 | 45496/1
111198 | 0x0128 | ResolutionUnit | SHORT | 1 | 2 | 2
123480 | 0x00fe | NewSubfileType | LONG | 1 | 0 | 0
123492 | 0x0100 | ImageWidth | LONG | 1 | 1728 | 1728
123504 | 0x0101 | ImageLength | LONG | 1 | 2265 | 2265
123516 | 0x0102 | BitsPerSample | SHORT | 1 | 1 | 1
123528 | 0x0103 | Compression | SHORT | 1 | 4 | 4
123540 | 0x0106 | PhotometricInterpretation | SHORT | 1 | 0 | 0
123552 | 0x010a | FillOrder | SHORT | 1 | 2 | 2
123564 | 0x0111 | StripOffsets | LONG | 1 | 111214 | 111214
123576 | 0x0115 | SamplesPerPixel | SHORT | 1 | 1 | 1
123588 | 0x0116 | RowsPerStrip | SHORT | 1 | 2265 | 2265
123600 | 0x0117 | StripByteCounts | LONG | 1 | 12248 | 12248
123612 | 0x011a | XResolution | RATIONAL | 1 | 123462 | 57926/1
123624 | 0x011b | YResolution | RATIONAL | 1 | 123470 | 57934/1
123636 | 0x0128 | ResolutionUnit | SHORT | 1 | 2 | 2
157122 | 0x00fe | NewSubfileType | LONG | 1 | 0 | 0
157134 | 0x0100 | ImageWidth | LONG | 1 | 1728 | 1728
157146 | 0x0101 | ImageLength | LONG | 1 | 2266 | 2266
157158 | 0x0102 | BitsPerSample | SHORT | 1 | 1 | 1
157170 | 0x0103 | Compression | SHORT | 1 | 4 | 4
157182 | 0x0106 | PhotometricInterpretation | SHORT | 1 | 0 | 0
157194 | 0x010a | FillOrder | SHORT | 1 | 2 | 2
157206 | 0x0111 | StripOffsets | LONG | 1 | 123652 | 123652
157218 | 0x0115 | SamplesPerPixel | SHORT | 1 | 1 | 1
157230 | 0x0116 | RowsPerStrip | SHORT | 1 | 2266 | 2266
157242 | 0x0117 | StripByteCounts | LONG | 1 | 33452 | 33452
```

```

157254 | 0x011a XResolution | RATIONAL | 1 | 157104 | 26032/2
157266 | 0x011b YResolution | RATIONAL | 1 | 157112 | 26040/2
157278 | 0x0128 ResolutionUnit | SHORT | 1 | 2 | 2
189448 | 0x00fe NewSubfileType | LONG | 1 | 0 | 0
189460 | 0x0100 ImageWidth | LONG | 1 | 1728 | 1728
189472 | 0x0101 ImageLength | LONG | 1 | 2266 | 2266
189484 | 0x0102 BitsPerSample | SHORT | 1 | 1 | 1
189496 | 0x0103 Compression | SHORT | 1 | 4 | 4
189508 | 0x0106 PhotometricInterpretation | SHORT | 1 | 0 | 0
189520 | 0x010a FillOrder | SHORT | 1 | 2 | 2
189532 | 0x0111 StripOffsets | LONG | 1 | 157294 | 157294
189544 | 0x0115 SamplesPerPixel | SHORT | 1 | 1 | 1
189556 | 0x0116 RowsPerStrip | SHORT | 1 | 2266 | 2266
189568 | 0x0117 StripByteCounts | LONG | 1 | 32136 | 32136
189580 | 0x011a XResolution | RATIONAL | 1 | 189430 | 58358/2
189592 | 0x011b YResolution | RATIONAL | 1 | 189438 | 58366/2
189604 | 0x0128 ResolutionUnit | SHORT | 1 | 2 | 2
213574 | 0x00fe NewSubfileType | LONG | 1 | 0 | 0
213586 | 0x0100 ImageWidth | LONG | 1 | 1728 | 1728
213598 | 0x0101 ImageLength | LONG | 1 | 2258 | 2258
213610 | 0x0102 BitsPerSample | SHORT | 1 | 1 | 1
213622 | 0x0103 Compression | SHORT | 1 | 4 | 4
213634 | 0x0106 PhotometricInterpretation | SHORT | 1 | 0 | 0
213646 | 0x010a FillOrder | SHORT | 1 | 2 | 2
213658 | 0x0111 StripOffsets | LONG | 1 | 189620 | 189620
213670 | 0x0115 SamplesPerPixel | SHORT | 1 | 1 | 1
213682 | 0x0116 RowsPerStrip | SHORT | 1 | 2258 | 2258
213694 | 0x0117 StripByteCounts | LONG | 1 | 23936 | 23936
213706 | 0x011a XResolution | RATIONAL | 1 | 213556 | 16948/3
213718 | 0x011b YResolution | RATIONAL | 1 | 213564 | 16956/3
213730 | 0x0128 ResolutionUnit | SHORT | 1 | 2 | 2
240228 | 0x00fe NewSubfileType | LONG | 1 | 0 | 0
240240 | 0x0100 ImageWidth | LONG | 1 | 1728 | 1728
240252 | 0x0101 ImageLength | LONG | 1 | 2261 | 2261
240264 | 0x0102 BitsPerSample | SHORT | 1 | 1 | 1
240276 | 0x0103 Compression | SHORT | 1 | 4 | 4
240288 | 0x0106 PhotometricInterpretation | SHORT | 1 | 0 | 0
240300 | 0x010a FillOrder | SHORT | 1 | 2 | 2
240312 | 0x0111 StripOffsets | LONG | 1 | 213746 | 213746
240324 | 0x0115 SamplesPerPixel | SHORT | 1 | 1 | 1
240336 | 0x0116 RowsPerStrip | SHORT | 1 | 2261 | 2261
240348 | 0x0117 StripByteCounts | LONG | 1 | 26464 | 26464
240360 | 0x011a XResolution | RATIONAL | 1 | 240210 | 43602/3
240372 | 0x011b YResolution | RATIONAL | 1 | 240218 | 43610/3
240384 | 0x0128 ResolutionUnit | SHORT | 1 | 2 | 2

```

```
676 rmills@rmillsmbp:~/Downloads $
```

Download the referenced file using curl because libtiff doesn't have webready support:

```

676 rmills@rmillsmbp:~/Downloads $ curl https://bz.apache.org/ooo/attachment.cgi?id=3581 > bug.tiff
% Total % Received % Xferd Average Speed Time Time Time Current
 Dload Upload Total Spent Left Speed
100 234k 100 234k 0 0 128k 0 0:00:01 0:00:01 --:--:-- 129k
677 rmills@rmillsmbp:~/Downloads $

```

Split the downloaded file:

```

677 rmills@rmillsmbp:~/Downloads $ tiffsplit bug.tiff XXX
TIFFFetchNormalTag: Warning, ASCII value for tag "ImageDescription" does not end in null byte.
678 rmills@rmillsmbp:~/Downloads $

```

List the extracted files:

```

678 rmills@rmillsmbp:~/Downloads $ dir *.tif
-rw-r--r--+ 1 rmills staff 43K 28 Oct 22:16 XXXaaa.tif
-rw-r--r--+ 1 rmills staff 38K 28 Oct 22:16 XXXaab.tif
-rw-r--r--+ 1 rmills staff 28K 28 Oct 22:16 XXXaac.tif
-rw-r--r--+ 1 rmills staff 12K 28 Oct 22:16 XXXaad.tif
-rw-r--r--+ 1 rmills staff 33K 28 Oct 22:16 XXXaae.tif
-rw-r--r--+ 1 rmills staff 32K 28 Oct 22:16 XXXaaf.tif
-rw-r--r--+ 1 rmills staff 24K 28 Oct 22:16 XXXaag.tif
-rw-r--r--+ 1 rmills staff 26K 28 Oct 22:16 XXXaah.tif
679 rmills@rmillsmbp:~/Downloads $

```

List the metadata in the first image:

```
679 rmills@rmillsmbp:~/Downloads $ exiv2 -pa XXXaaa.tif
Exif.Image.NewSubfileType      Long      1 Primary image
Exif.Image.ImageWidth         Short     1 1728
Exif.Image.ImageLength        Short     1 2266
Exif.Image.BitsPerSample       Short     1 1
Exif.Image.Compression         Short     1 T6/Group 4 Fax
Exif.Image.PhotometricInterpretation Short     1 White Is Zero
Exif.Image.FillOrder          Short     1 2
Exif.Image.ImageDescription    Ascii     13 Scanned data
Exif.Image.StripOffsets        Long      1 8
Exif.Image.SamplesPerPixel     Short     1 1
Exif.Image.RowsPerStrip       Short     1 2266
Exif.Image.StripByteCounts     Long      1 43788
Exif.Image.XResolution         Rational  1 200
Exif.Image.YResolution         Rational  1 200
Exif.Image.PlanarConfiguration Short     1 1
Exif.Image.ResolutionUnit      Short     1 inch
```

**Update every image using exiv2:**

```
680 rmills@rmillsmbp:~/Downloads $ for i in XXX*.tif; do exiv2 -M"set Exif.Image.ImageDescription Scanned data
in file:$i" $i; done
681 rmills@rmillsmbp:~/Downloads $
```

**Check that the timestamps have updated:**

```
681 rmills@rmillsmbp:~/Downloads $ dir *.tiff
-rw-r--r--+ 1 rmills  staff  235K 28 Oct 22:16 bug.tiff
682 rmills@rmillsmbp:~/Downloads $ dir *.tif
-rw-r--r--+ 1 rmills  staff   43K 28 Oct 22:18 XXXaaa.tif
-rw-r--r--+ 1 rmills  staff   38K 28 Oct 22:18 XXXaab.tif
-rw-r--r--+ 1 rmills  staff   28K 28 Oct 22:18 XXXaac.tif
-rw-r--r--+ 1 rmills  staff   12K 28 Oct 22:18 XXXaad.tif
-rw-r--r--+ 1 rmills  staff   33K 28 Oct 22:18 XXXaae.tif
-rw-r--r--+ 1 rmills  staff   32K 28 Oct 22:18 XXXaaf.tif
-rw-r--r--+ 1 rmills  staff   24K 28 Oct 22:18 XXXaag.tif
-rw-r--r--+ 1 rmills  staff   26K 28 Oct 22:18 XXXaah.tif
683 rmills@rmillsmbp:~/Downloads $
```

**Use tiffcp to recreate a multi-page tiff:**

```
683 rmills@rmillsmbp:~/Downloads $ tiffcp XXX*.tif bug-changed.tiff
684 rmills@rmillsmbp:~/Downloads $
```

**And read the metadata with exiv2 -pS:**

```
684 rmills@rmillsmbp:~/Downloads $ exiv2 -pS bug-changed.tiff
STRUCTURE OF TIFF FILE (II): bug-changed.tiff
address | tag | type | count | offset | value
43796 | 0x00fe NewSubfileType | LONG | 1 | 0 | 0
43808 | 0x0100 ImageWidth | SHORT | 1 | 1728 | 1728
43820 | 0x0101 ImageLength | SHORT | 1 | 2266 | 2266
43832 | 0x0102 BitsPerSample | SHORT | 1 | 1 | 1
43844 | 0x0103 Compression | SHORT | 1 | 4 | 4
43856 | 0x0106 PhotometricInterpretation | SHORT | 1 | 0 | 0
43868 | 0x010a FillOrder | SHORT | 1 | 2 | 2
43880 | 0x010e ImageDescription | ASCII | 32 | 44020 | Scanned data in file:XXXaaa.tif
f
43892 | 0x0111 StripOffsets | LONG | 1 | 8 | 8
43904 | 0x0112 Orientation | SHORT | 1 | 1 | 1
43916 | 0x0115 SamplesPerPixel | SHORT | 1 | 1 | 1
43928 | 0x0116 RowsPerStrip | SHORT | 1 | 2266 | 2266
43940 | 0x0117 StripByteCounts | LONG | 1 | 43786 | 43786
43952 | 0x011a XResolution | RATIONAL | 1 | 44004 | 44004/0
43964 | 0x011b YResolution | RATIONAL | 1 | 44012 | 44012/0
43976 | 0x011c PlanarConfiguration | SHORT | 1 | 1 | 1
43988 | 0x0128 ResolutionUnit | SHORT | 1 | 2 | 2
82660 | 0x00fe NewSubfileType | LONG | 1 | 0 | 0
82672 | 0x0100 ImageWidth | SHORT | 1 | 1728 | 1728
82684 | 0x0101 ImageLength | SHORT | 1 | 2267 | 2267
82696 | 0x0102 BitsPerSample | SHORT | 1 | 1 | 1
82708 | 0x0103 Compression | SHORT | 1 | 4 | 4
82720 | 0x0106 PhotometricInterpretation | SHORT | 1 | 0 | 0
82732 | 0x010a FillOrder | SHORT | 1 | 2 | 2
```

82744	0x010e	ImageDescription	ASCII	32	82884	Scanned data in file:XXXaab.ti
f						
82756	0x0111	StripOffsets	LONG	1	44052	44052
82768	0x0112	Orientation	SHORT	1	1	1
82780	0x0115	SamplesPerPixel	SHORT	1	1	1
82792	0x0116	RowsPerStrip	SHORT	1	2267	2267
82804	0x0117	StripByteCounts	LONG	1	38605	38605
82816	0x011a	XResolution	RATIONAL	1	82868	17332/1
82828	0x011b	YResolution	RATIONAL	1	82876	17340/1
82840	0x011c	PlanarConfiguration	SHORT	1	1	1
82852	0x0128	ResolutionUnit	SHORT	1	2	2
111132	0x00fe	NewSubfileType	LONG	1	0	0
111144	0x0100	ImageWidth	SHORT	1	1728	1728
111156	0x0101	ImageLength	SHORT	1	2266	2266
111168	0x0102	BitsPerSample	SHORT	1	1	1
111180	0x0103	Compression	SHORT	1	4	4
111192	0x0106	PhotometricInterpretation	SHORT	1	0	0
111204	0x010a	FillOrder	SHORT	1	2	2
111216	0x010e	ImageDescription	ASCII	32	111356	Scanned data in file:XXXaac.ti
f						
111228	0x0111	StripOffsets	LONG	1	82916	82916
111240	0x0112	Orientation	SHORT	1	1	1
111252	0x0115	SamplesPerPixel	SHORT	1	1	1
111264	0x0116	RowsPerStrip	SHORT	1	2266	2266
111276	0x0117	StripByteCounts	LONG	1	28214	28214
111288	0x011a	XResolution	RATIONAL	1	111340	45804/1
111300	0x011b	YResolution	RATIONAL	1	111348	45812/1
111312	0x011c	PlanarConfiguration	SHORT	1	1	1
111324	0x0128	ResolutionUnit	SHORT	1	2	2
123636	0x00fe	NewSubfileType	LONG	1	0	0
123648	0x0100	ImageWidth	SHORT	1	1728	1728
123660	0x0101	ImageLength	SHORT	1	2265	2265
123672	0x0102	BitsPerSample	SHORT	1	1	1
123684	0x0103	Compression	SHORT	1	4	4
123696	0x0106	PhotometricInterpretation	SHORT	1	0	0
123708	0x010a	FillOrder	SHORT	1	2	2
123720	0x010e	ImageDescription	ASCII	32	123860	Scanned data in file:XXXaad.ti
f						
123732	0x0111	StripOffsets	LONG	1	111388	111388
123744	0x0112	Orientation	SHORT	1	1	1
123756	0x0115	SamplesPerPixel	SHORT	1	1	1
123768	0x0116	RowsPerStrip	SHORT	1	2265	2265
123780	0x0117	StripByteCounts	LONG	1	12245	12245
123792	0x011a	XResolution	RATIONAL	1	123844	58308/1
123804	0x011b	YResolution	RATIONAL	1	123852	58316/1
123816	0x011c	PlanarConfiguration	SHORT	1	1	1
123828	0x0128	ResolutionUnit	SHORT	1	2	2
157344	0x00fe	NewSubfileType	LONG	1	0	0
157356	0x0100	ImageWidth	SHORT	1	1728	1728
157368	0x0101	ImageLength	SHORT	1	2266	2266
157380	0x0102	BitsPerSample	SHORT	1	1	1
157392	0x0103	Compression	SHORT	1	4	4
157404	0x0106	PhotometricInterpretation	SHORT	1	0	0
157416	0x010a	FillOrder	SHORT	1	2	2
157428	0x010e	ImageDescription	ASCII	32	157568	Scanned data in file:XXXaae.ti
f						
157440	0x0111	StripOffsets	LONG	1	123892	123892
157452	0x0112	Orientation	SHORT	1	1	1
157464	0x0115	SamplesPerPixel	SHORT	1	1	1
157476	0x0116	RowsPerStrip	SHORT	1	2266	2266
157488	0x0117	StripByteCounts	LONG	1	33450	33450
157500	0x011a	XResolution	RATIONAL	1	157552	26480/2
157512	0x011b	YResolution	RATIONAL	1	157560	26488/2
157524	0x011c	PlanarConfiguration	SHORT	1	1	1
157536	0x0128	ResolutionUnit	SHORT	1	2	2
189738	0x00fe	NewSubfileType	LONG	1	0	0
189750	0x0100	ImageWidth	SHORT	1	1728	1728
189762	0x0101	ImageLength	SHORT	1	2266	2266
189774	0x0102	BitsPerSample	SHORT	1	1	1
189786	0x0103	Compression	SHORT	1	4	4
189798	0x0106	PhotometricInterpretation	SHORT	1	0	0
189810	0x010a	FillOrder	SHORT	1	2	2
189822	0x010e	ImageDescription	ASCII	32	189962	Scanned data in file:XXXaaf.ti
f						
189834	0x0111	StripOffsets	LONG	1	157600	157600

```

189846 | 0x0112 Orientation | SHORT | 1 | 1 | 1
189858 | 0x0115 SamplesPerPixel | SHORT | 1 | 1 | 1
189870 | 0x0116 RowsPerStrip | SHORT | 1 | 2266 | 2266
189882 | 0x0117 StripByteCounts | LONG | 1 | 32135 | 32135
189894 | 0x011a XResolution | RATIONAL | 1 | 189946 | 58874/2
189906 | 0x011b YResolution | RATIONAL | 1 | 189954 | 58882/2
189918 | 0x011c PlanarConfiguration | SHORT | 1 | 1 | 1
189930 | 0x0128 ResolutionUnit | SHORT | 1 | 2 | 2
213930 | 0x00fe NewSubfileType | LONG | 1 | 0 | 0
213942 | 0x0100 ImageWidth | SHORT | 1 | 1728 | 1728
213954 | 0x0101 ImageLength | SHORT | 1 | 2258 | 2258
213966 | 0x0102 BitsPerSample | SHORT | 1 | 1 | 1
213978 | 0x0103 Compression | SHORT | 1 | 4 | 4
213990 | 0x0106 PhotometricInterpretation | SHORT | 1 | 0 | 0
214002 | 0x010a FillOrder | SHORT | 1 | 2 | 2
214014 | 0x010e ImageDescription | ASCII | 32 | 214154 | Scanned data in file:XXXaag.ti
f
214026 | 0x0111 StripOffsets | LONG | 1 | 189994 | 189994
214038 | 0x0112 Orientation | SHORT | 1 | 1 | 1
214050 | 0x0115 SamplesPerPixel | SHORT | 1 | 1 | 1
214062 | 0x0116 RowsPerStrip | SHORT | 1 | 2258 | 2258
214074 | 0x0117 StripByteCounts | LONG | 1 | 23934 | 23934
214086 | 0x011a XResolution | RATIONAL | 1 | 214138 | 17530/3
214098 | 0x011b YResolution | RATIONAL | 1 | 214146 | 17538/3
214110 | 0x011c PlanarConfiguration | SHORT | 1 | 1 | 1
214122 | 0x0128 ResolutionUnit | SHORT | 1 | 2 | 2
240652 | 0x00fe NewSubfileType | LONG | 1 | 0 | 0
240664 | 0x0100 ImageWidth | SHORT | 1 | 1728 | 1728
240676 | 0x0101 ImageLength | SHORT | 1 | 2261 | 2261
240688 | 0x0102 BitsPerSample | SHORT | 1 | 1 | 1
240700 | 0x0103 Compression | SHORT | 1 | 4 | 4
240712 | 0x0106 PhotometricInterpretation | SHORT | 1 | 0 | 0
240724 | 0x010a FillOrder | SHORT | 1 | 2 | 2
240736 | 0x010e ImageDescription | ASCII | 32 | 240876 | Scanned data in file:XXXaah.ti
f
240748 | 0x0111 StripOffsets | LONG | 1 | 214186 | 214186
240760 | 0x0112 Orientation | SHORT | 1 | 1 | 1
240772 | 0x0115 SamplesPerPixel | SHORT | 1 | 1 | 1
240784 | 0x0116 RowsPerStrip | SHORT | 1 | 2261 | 2261
240796 | 0x0117 StripByteCounts | LONG | 1 | 26463 | 26463
240808 | 0x011a XResolution | RATIONAL | 1 | 240860 | 44252/3
240820 | 0x011b YResolution | RATIONAL | 1 | 240868 | 44260/3
240832 | 0x011c PlanarConfiguration | SHORT | 1 | 1 | 1
240844 | 0x0128 ResolutionUnit | SHORT | 1 | 2 | 2
685 rmills@rmillsmbp:~/Downloads $

```

#### #5 - 29 Oct 2015 09:04 - Robin Mills

- File bug.tiff added

#### #6 - 13 Jun 2016 11:46 - Robin Mills

- Status changed from New to Assigned

- Assignee set to Robin Mills

- Target version changed from 1.0 to 0.28

#### Files

File Name	Size	Date	Owner
multipage_tif_example.tif	4.2 MB	28 Oct 2015	Robin Mills
bug.tiff	235 KB	29 Oct 2015	Robin Mills