

Exiv2 - Feature #1149

Support for metadata in FLIR One thermal images (jpeg)

09 Jan 2016 11:34 - Max Pozdeev

Status: New	Start date: 09 Jan 2016
Priority: Normal	Due date:
Assignee:	% Done: 0%
Category: metadata	Estimated time: 0.00 hour
Target version: 1.0	
Description Attached image is produced by FLIR One 2nd gen for los. Exiftool shows more information (like Relative Humidity, Field Of View, Palette Name, ...)	
Related issues: Related to Exiv2 - Bug #1150: Unable to build for Mac OSX 10.6 Closed 09 Jan 2016	

Associated revisions

Revision 4178 - 10 Jan 2016 14:41 - Robin Mills

#1149. Modify -pR to find and report the tiff in an APP1/FLIR segment.

Revision 4179 - 10 Jan 2016 19:02 - Robin Mills

#1149. Added fff.h (from plir.com) and code strengthening.

History

#1 - 09 Jan 2016 11:44 - Robin Mills

- Category set to metadata

- Target version set to 1.0

Thanks for reporting this. This is an interesting issue. I see there are a couple of APP1 segments in your file that contain this data.

```
$ exiv2 -pS http://dev.exiv2.org/attachments/download/881/flir.jpeg
STRUCTURE OF JPEG FILE: http://dev.exiv2.org/attachments/download/881/flir.jpeg
address | marker | length | data
  2 | 0xd8 SOI | 0
  4 | 0xe0 APP0 | 16 | JFIF.....
 22 | 0xe1 APP1 | 3986 | Exif..II*.....
4010 | 0xe1 APP1 | 65534 | FLIR....FFF.....d
69546 | 0xe1 APP1 | 34618 | FLIR...|.z....0...a.$.. xt.!.
104166 | 0xdb DQT | 67
104235 | 0xdb DQT | 67
104304 | 0xc0 SOF0 | 17
104323 | 0xc4 DHT | 31
104356 | 0xc4 DHT | 181
104539 | 0xc4 DHT | 31
104572 | 0xc4 DHT | 181
104755 | 0xda SOS | 12
545 rmills@rmillsmbp:~/gnu/exiv2/trunk $
```

I'm going to assign this to Target Version 1.0 as I don't have time to deal with this for v0.26. <http://dev.exiv2.org/projects/exiv2/news> It's quite likely that I'll deal with this for v0.27, however I haven't started scheduling v0.27 yet.

What is FLIR?

#2 - 09 Jan 2016 12:08 - Max Pozdeev

FLIR is a manufacturer of thermal imaging devices, www.flir.com

FLIR ONE - <http://www.flir.com/flirone/>

#3 - 09 Jan 2016 14:04 - Robin Mills

Can you tell me a little more about this to help me understand how the importance of FLIR. Are there millions of those devices in use, or is this an obscure and unusual device.

We have outstanding item on the schedule for v0.26 to use exiftool for lens detection when we don't know what the lens is. My plan is to run exiftool as a webservice. So, it might be possible to take advantage in v0.26. I've looked at the webpages on Phil's ExifTool web site. It looks like quite an undertaking to deal with this. However the web-service approach might be a useful "stop gap" in the short term. <http://dev.exiv2.org/issues/1034>

#4 - 09 Jan 2016 14:39 - Max Pozdeev

Thermal cameras are very specific and used mostly by professionals because of their price. But recently the market shows "cheap" thermal cameras like FLIR ONE so the number of such devices will grow. I'm not a professional user of such devices but still I think this is a low-priority feature as for now.

As for me the web-service is good solution but I will not use it often. I use exiv2 as a library for fast processing in my app (I have commercial license).

P.S. Just for info. I can't build the last revision from trunk with -stdlib=libstdc++ flag. Should I create new issue?

#5 - 09 Jan 2016 14:53 - Robin Mills

Thanks for the insight. The web service will be a fallback and there will be an API to enable/disable it.

Please create an issue about the build and I'll deal with it. Thanks for letting me know. The build matrix is very large and, although we have a build server, we cannot build every possible build configuration. So I have to rely on users to let me know when an untested build configuration is broken.

#6 - 10 Jan 2016 14:43 - Robin Mills

[r4178](#) I've "tweaked" the code in **exiv2 -pR** to find the TIFF in the APP1/FLIR segment. This reveals:

```

4010 | 0xe1 APP1 | 65534 | FLIR....FFF.....d
STRUCTURE OF TIFF FILE (II): MemIo
address | tag | type | count | offset | value
10 | 0x010f Make | ASCII | 16 | 122 | FLIR Systems AB
22 | 0x0110 Model | ASCII | 5 | 138 | FLIR
34 | 0x0112 Orientation | SHORT | 1 | 0 | 0
46 | 0x011a XResolution | RATIONAL | 1 | 144 | 144/0
58 | 0x011b YResolution | RATIONAL | 1 | 152 | 152/0
70 | 0x0128 ResolutionUnit | SHORT | 1 | 2 | 2
82 | 0x0131 Software | ASCII | 2 | 42 | .
94 | 0x0213 YCbCrPositioning | SHORT | 1 | 1 | 1
106 | 0x8769 ExifTag | LONG | 1 | 160 | 160
STRUCTURE OF TIFF FILE (II): MemIo
address | tag | type | count | offset | value
162 | 0x9000 ExifVersion | ASCII | 4 | 808596016 | STRU
174 | 0x9101 ComponentsConfiguration | UNDEFINED | 4 | 16909056 |
186 | 0x927c MakerNote | UNDEFINED | 54 | 274 | ...
198 | 0xa000 FlashpixVersion | ASCII | 4 | 808464688 | ...
210 | 0xa001 ColorSpace | SHORT | 1 | 1 | 1
222 | 0xa002 PixelXDimension | SHORT | 1 | 640 | 640
234 | 0xa003 PixelYDimension | SHORT | 1 | 480 | 480
246 | 0xa404 DigitalZoomRatio | RATIONAL | 1 | 328 | 328/0
258 | 0xa420 ImageUniqueID | ASCII | 1 | 336 |
END MemIo
340 | 0x0103 Compression | SHORT | 1 | 6 | 6
352 | 0x0112 Orientation | SHORT | 1 | 0 | 0
364 | 0x011a XResolution | RATIONAL | 1 | 428 | 428/0
376 | 0x011b YResolution | RATIONAL | 1 | 436 | 436/0
388 | 0x0128 ResolutionUnit | SHORT | 1 | 2 | 2
400 | 0x0201 JPEGInterchangeFormat | LONG | 1 | 444 | 444
412 | 0x0202 JPEGInterchangeFormatLeng | LONG | 1 | 1971 | 1971

```

Some tag labels are wrong, however I can easily fix that.

I downloaded the SDK from Flir.com. The SDK is for iOS and Android. The SDK is precompiled (.framework for iOS, .jar for Android). The sample code is for creating apps for their device. There doesn't appear to be anything to give us a quick start on the metadata.

I've raised a query on their forum and perhaps somebody will help. <http://developer.flir.com/forums/topic/metadata-format/>

Phil has published documentation: <http://owl.phy.queensu.ca/~phil/exiftool/TagNames/FLIR.html> And there's beautiful Perl code to decode it here: <http://sourceforge.net/p/exiftool/code/ci/master/tree/lib/Image/ExifTool/FLIR.pm>

Files

flir.jpeg	363 KB	09 Jan 2016	Max Pozdeev
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