Exiv2 - Bug #1035

Lens model not detected (exiv2 -> LensFun -> darktable)

19 Feb 2015 15:36 - Rodrigo De Leon

Status:	Closed	**Start date:**	19 Feb 2015
Priority:	Normal	**Due date:**	
Assignee:	Robin Mills	**% Done:**	100%
Category:	metadata	**Estimated time:**	6.00 hours
Target version:	0.26		

Description

Hi.

Background details:
1) http://www.darktable.org/redmine/issues/10331
2) https://sourceforge.net/p/lensfun/bugs/18/

Is there anything that can be done in exiv2 to fix this?

Thanks for your time.

Regards.

Related issues:

Related to Exiv2 - Bug #1143: Unable to extract embedded preview from jpg for...	**Closed**	**24 Dec 2015**

Associated revisions

Revision 4189 - 16 Jan 2016 19:58 - Robin Mills

#1035 test files

History

#1 - 19 Feb 2015 20:44 - Niels Kristian Bech Jensen

Sony makernote support is in serious need of an update to support E-mount lens detection amongst other things. I do not know when such an update will happen due to lack of time.

Best regards,
Niels Kristian Bech Jensen

#2 - 05 Mar 2015 19:37 - Robin Mills

- Category set to metadata

- Status changed from New to Assigned

- Assignee set to Robin Mills

- Target version set to 0.26

I'm going to accept this assignment for v0.26 as we can't consider this for v0.25. I'll have to investigate what's involved in this. So, all I am agreeing to do for v0.26 is consider the effort involved. If it's a lot of work, it might be pushed beyond v0.26.

#3 - 26 Mar 2015 11:39 - Robin Mills

- Target version changed from 0.26 to 0.25

#4 - 27 Mar 2015 12:31 - Robin Mills

- Target version changed from 0.25 to 0.26

Pushed back to v0.26. I don't why I moved this to v0.25 yesterday.

#5 - 23 May 2015 08:37 - Robin Mills

- Assignee deleted (Robin Mills)

#6 - 12 Oct 2015 09:01 - Robin Mills

- Assignee set to Robin Mills

#7 - 04 Jan 2016 10:53 - Robin Mills

- % Done changed from 0 to 10

- Estimated time set to 10.00 h

I'm adding a SWAG to my outstanding issues for v0.26 to get a more accurate assessment of the status of v0.26. I can't remember anything about this - so I'll guess about a day's work.

#8 - 13 Jan 2016 19:42 - Robin Mills

- % Done changed from 10 to 50

- Estimated time changed from 10.00 h to 5.00 h

Good News, I believe I can fix this. It's almost identical to #1153 in which .ARW file correctly identifies the Lens and the .JPG file does not. Please attach the DSC00050.JPG (to match DSC00050.ARW) and I'll fix this.

It doesn't have to be DSC00050.JPG - however I need matched pairs of JPG/ARW for every camera/lens combination. It's also very useful to shoot ARW/JPG pairs at every aperture setting of the camera/lens combo.

The lens is correctly identified in the RAW image:

```
1678 rmills@rmillsmbp:~ $ exiv2 -pa DSC00050.ARW  | grep -i lens
Exif.Sony2.LensID                            Long        1  Manual lens
Exif.Photo.LensSpecification                 Rational    4  190/10 190/10 28/10 28/10
Exif.Photo.LensModel                         Ascii      12  E 19mm F2.8
$
```

However, the LensID is ambiguously set to 0xffff (65535).

```
1679 rmills@rmillsmbp:~ $ exiv2 -pv DSC00050.ARW  | grep -i lens
0xb027 Sony2        LensID                       Long        1  65535
0xa432 Photo        LensSpecification            Rational    4  190/10 190/10 28/10 28/10
0xa434 Photo        LensModel                    Ascii      12  E 19mm F2.8
$
```

#9 - 13 Jan 2016 20:11 - Robin Mills

- Estimated time changed from 5.00 h to 6.00 h

#10 - 14 Jan 2016 20:38 - Rodrigo De Leon

Hi.

Thanks for the feedback.

I no longer have the original DSC00050.JPG, but I can take a new set of photos and upload them.

Don't remember if this only happen with the 19mm or also with the 30mm, but I'll upload both sets.

Just give me a few minutes...

#11 - 14 Jan 2016 20:55 - Rodrigo De Leon

Hi.

There seems to be a 20 MB file upload limit for this issue tracker, but all ARW files measure about 24-25 MB.

I'm gonna have to archive and split to be able to upload.

Hang on...

#12 - 14 Jan 2016 20:58 - Rodrigo De Leon

- File 19mm.tar.gz_part_aa added

- File 19mm.tar.gz_part_ab added

- File 19mm.tar.gz_part_ac added

- File 19mm.tar.gz_part_ad added

- File 19mm.tar.gz_part_ae added

- File 19mm.tar.gz_part_af added

- File 19mm.tar.gz_part_ag added

- File 19mm.tar.gz_part_ah added

- File 19mm.tar.gz_part_ai added

- File 19mm.tar.gz_part_aj added

Batch 1...

#13 - 14 Jan 2016 21:01 - Rodrigo De Leon

- File 19mm.tar.gz_part_ak added

- File 19mm.tar.gz_part_al added

- File 19mm.tar.gz_part_am added

- File 19mm.tar.gz_part_an added

- File 19mm.tar.gz_part_ao added

- File 19mm.tar.gz_part_ap added

- File 19mm.tar.gz_part_aq added

- File 19mm.tar.gz_part_ar added

- File 19mm.tar.gz_part_as added

- File 19mm.tar.gz_part_at added

Batch 2...

#14 - 14 Jan 2016 21:05 - Rodrigo De Leon

- File 19mm.tar.gz_part_au added

- File 19mm.tar.gz_part_av added

- File 19mm.tar.gz_part_aw added

- File 19mm.tar.gz_part_ax added

- File 19mm.tar.gz_part_ay added

- File 19mm.tar.gz_part_az added

- File 19mm.tar.gz_part_ba added

- File 19mm.tar.gz_part_bb added

- File 19mm.tar.gz_part_bc added

Batch 3...

#15 - 14 Jan 2016 21:08 - Rodrigo De Leon

- File 30mm.tar.gz_part_aa added

- File 30mm.tar.gz_part_ab added

- File 30mm.tar.gz_part_ac added

- File 30mm.tar.gz_part_ad added

- File 30mm.tar.gz_part_ae added

- File 30mm.tar.gz_part_af added

- File 30mm.tar.gz_part_ag added

- File 30mm.tar.gz_part_ah added

- File 30mm.tar.gz_part_ai added

- File 30mm.tar.gz_part_aj added

Batch 4...

#16 - 14 Jan 2016 21:13 - Rodrigo De Leon

- File 30mm.tar.gz_part_ak added

- File 30mm.tar.gz_part_al added

- File 30mm.tar.gz_part_am added

- File 30mm.tar.gz_part_an added

- File 30mm.tar.gz_part_ao added

- File 30mm.tar.gz_part_ap added

- File 30mm.tar.gz_part_aq added

- File 30mm.tar.gz_part_ar added

- File 30mm.tar.gz_part_as added

- File 30mm.tar.gz_part_at added

Batch 5...

#17 - 14 Jan 2016 21:16 - Rodrigo De Leon

- File 30mm.tar.gz_part_au added

- File 30mm.tar.gz_part_av added

- File 30mm.tar.gz_part_aw added

- File 30mm.tar.gz_part_ax added

- File 30mm.tar.gz_part_ay added

- File 30mm.tar.gz_part_az added

- File 30mm.tar.gz_part_ba added

- File 30mm.tar.gz_part_bb added

- File 30mm.tar.gz_part_bc added

Batch 6 (final)...

#18 - 14 Jan 2016 21:17 - Rodrigo De Leon

Done.

Let me know if you need something else.

Cheers.

#19 - 14 Jan 2016 23:04 - Robin Mills

Thanks, Rodrigo. It's 23:03 in England. I'm off to bed. I'll look at this tomorrow.

#20 - 16 Jan 2016 00:07 - Robin Mills

Apologies, Rodrigo. It's been a very busy day and I didn't get to your issue. I will deal with it on Saturday.

I had another thought however! Can you get your camera to take lower resolution photos which are within the 15mb limit? After all, I'm only interested in the 50k of metadata - the rest of the file isn't useful!

#21 - 16 Jan 2016 20:40 - Robin Mills

- % Done changed from 50 to 70

Rodrigo

Thanks for the files. I've got them, unzipped them and submitted them to our test file repository: svn://dev.exiv2.org/svn/testdata/trunk/1035

What is your expectation here? We are detecting Exif.Photo.LensModel as:

```
520 rmills@rmillsmbp:~/gnu/exiv2/testdata/trunk/1035 $ exiv2 -pa -K Exif.Photo.LensModel *.JPG
DSC05005.JPG          Exif.Photo.LensModel                         Ascii      12  E 30mm F2.8
...
DSC05043.JPG          Exif.Photo.LensModel                         Ascii      12  E 19mm F2.8
521 rmills@rmillsmbp:~/gnu/exiv2/testdata/trunk/1035 $ exiv2 -pa -K Exif.Photo.LensModel *.ARW
DSC05005.ARW          Exif.Photo.LensModel                         Ascii      12  E 30mm F2.8
...
DSC05043.ARW          Exif.Photo.LensModel                         Ascii      12  E 19mm F2.8
```

```
522 rmills@rmillsmbp:~/gnu/exiv2/testdata/trunk/1035 $
```

I see exiftool reports it's a Sigma Lens:

```
$ for i in DSC05043.*; do echo --- $i ---- ; (exiftool -all $i| grep -i Lens) ; done
--- DSC05043.ARW ----
Lens Type                       : E-Mount, T-Mount, Other Lens or no lens
Lens Spec                       : E 19mm F2.8
Lens Zoom Position              : 0%
Lens Mount 2                    : E-mount
Lens Type 3                     : Unknown E-mount lens or other lens
Lens E-mount Version            : 1.00
Lens Firmware Version           : Ver.01
Lens Mount                      : E-mount
Lens Format                     : APS-C
Lens Type 2                     : Unknown E-mount lens or other lens
Lens Spec Features              : E
Lens Info                       : 19mm f/2.8
Lens Model                      : E 19mm F2.8
Lens ID                         : Sigma 19mm F2.8 [EX] DN
--- DSC05043.JPG ----
Lens Type                       : E-Mount, T-Mount, Other Lens or no lens
Lens Spec                       : E 19mm F2.8
Lens Zoom Position              : 0%
Lens Mount 2                    : E-mount
Lens Type 3                     : Unknown E-mount lens or other lens
Lens E-mount Version            : 1.00
Lens Firmware Version           : Ver.01
Lens Mount                      : E-mount
Lens Format                     : APS-C
Lens Type 2                     : Unknown E-mount lens or other lens
Lens Spec Features              : E
Lens Info                       : 19mm f/2.8
Lens Model                      : E 19mm F2.8
Lens ID                         : Sigma 19mm F2.8 [EX] DN
524 rmills@rmillsmbp:~/gnu/exiv2/testdata/trunk/1035 $
```

For sure, the 'Sigma' is not in the metadata:

```
527 rmills@rmillsmbp:~/gnu/exiv2/testdata/trunk/1035 $ exiv2 -pa --grep lens/i DSC05043.*
DSC05043.ARW          Exif.Sony2.LensID                           Long        1  Manual lens
DSC05043.ARW          Exif.Photo.LensSpecification                Rational    4  190/10 190/10 28/10 28/10
DSC05043.ARW          Exif.Photo.LensModel                        Ascii      12  E 19mm F2.8
DSC05043.JPG          Exif.Sony1.LensID                           Long        1  Manual lens
DSC05043.JPG          Exif.Photo.LensSpecification                Rational    4  190/10 190/10 28/10 28/10
DSC05043.JPG          Exif.Photo.LensModel                        Ascii      12  E 19mm F2.8
528 rmills@rmillsmbp:~/gnu/exiv2/testdata/trunk/1035 $
```

However it could be deduced from other metadata such as the crop factor (or the LensSpecification above):

```
 530 rmills@rmillsmbp:~/gnu/exiv2/testdata/trunk/1035 $ exiv2 -pa --grep focal/i DSC05043.*
DSC05043.ARW          Exif.Photo.FocalLength                      Rational    1  19.0 mm
DSC05043.ARW          Exif.Photo.FocalLengthIn35mmFilm            Short       1  28.0 mm
DSC05043.JPG          Exif.Photo.FocalLength                      Rational    1  19.0 mm
DSC05043.JPG          Exif.Photo.FocalLengthIn35mmFilm            Short       1  28.0 mm
531 rmills@rmillsmbp:~/gnu/exiv2/testdata/trunk/1035 $
```

I've never used DarkTable nor LensFun, so I don't understand the information you reported to them. I've checked back a few years to exiv2 v0.23 (about 2012 or so). exiv2 v0.23 reports the same lens data as the current trunk - so upgrading the version of in DarkTable and/or LensFun will change nothing.

I've looked at the exiftool lens identification code and I don't know how then discovered it was a Sigma Lens, I can put more effort into that - or cheat and ask Phil! The (perl) code is here: http://dev.exiv2.org/issues/1143#note-11

However, before I roll up my sleeves, or involve anybody else, I'd like to know what you are looking for here.

#22 - 10 Feb 2016 09:54 - Rodrigo De Leon

Hi.

Really sorry for the late update.

OK, to summarize:

1. darktable is a raw photo developer, similar to lightroom, capture one, etc.

2. they use exiv2 for lens identification and lensfun for lens correction (distortion, TCA, vignetting). Detailed info here:
    - https://www.darktable.org/2015/02/on-lens-detection-and-correction/
3. they match lens name to (apparently) normalized exiv2 names, list here:
    - http://lensfun.sourceforge.net/lenslist/
4. for the 19mm, 30mm and 60mm Sigma lenses, there seem to be no Sony entries:
    - http://dev.exiv2.org/projects/exiv2/repository/entry/trunk/src/minoltamn.cpp
5. there seem to be valid entries for these lenses on the Olympus side, though:
    - 19mm: http://dev.exiv2.org/projects/exiv2/repository/revisions/3048/entry/trunk/src/olympusmn.cpp#L1287
    - 30mm: http://dev.exiv2.org/projects/exiv2/repository/revisions/3048/entry/trunk/src/olympusmn.cpp#L1285
    - 60mm: http://dev.exiv2.org/projects/exiv2/repository/revisions/3048/entry/trunk/src/olympusmn.cpp#L1293
6. so, basically, the "fix" is for exiv2 to return the normalized names for the Sony version of those lenses, so that they can be matched against the names on the lensfun list here:
    - http://lensfun.sourceforge.net/lenslist/
      (themselves based on the normalized exiv2 names, see olympusmn.cpp).

Hope that was clear enough.

Anything else, just let me know.

Cheers.

#23 - 10 Feb 2016 10:00 - Rodrigo De Leon

Just for for completeness, here are the expected normalized names (complete lens list, here -> http://lensfun.sourceforge.net/lenslist/):

19mm:

- Sigma 19mm f/2.8 EX DN

30mm:

- Sigma 30mm f/2.8 EX DN

60mm:

- Sigma 60mm f/2.8 DN

Cheers.

#24 - 10 Feb 2016 10:13 - Robin Mills

Thanks, Rodrigo

Niels has been dealing with makernote/lens matters and has started a college course in addition to his very demanding job. So, I agreed last September to take over this stuff. It's been quite a learning curve to understand how this works and fix a few lens. I've reached a conclusion: http://dev.exiv2.org/issues/1160#note-1

As I've started to work on your stuff, I'll have a look at this at the weekend. If you have any thoughts about my plan to use exiftool over a web service, I'm interested to hear your comments.

Robin

#25 - 10 Feb 2016 16:15 - Rodrigo De Leon

Interesting.

If I understand correctly:

- that method would be for initial identification (exiv2 does not initially know of the lens)?
- it's required to be online.
- afterwards, the info is incorporated to exiv2 for the next release?

Or am I understanding wrong?

Cheers.

#26 - 10 Feb 2016 16:47 - Robin Mills

I think your summary is about correct. I'm saying that when the LensID is unique, we will identify it. When we don't know what it is, we'll use a webservice to ask exiftool. I will maintain and add new lens which have a unique LensID.

I don't know how lens recognition arrived in the code base. We read/write metadata. The meaning of that metadata isn't our concern. Guessing the lens from the focal length/aperture doesn't feel good. And it's consuming a lot of my time. At the moment, I'm performing about 70% of the work on Exiv2 and it adds up to an unpaid full-time job. I'd like to reduce the burden that I am carrying.

#27 - 07 May 2016 18:46 - Robin Mills

- Status changed from Assigned to Resolved

- % Done changed from 70 to 100

I've added a new feature with #1034 to read from the file ~/.exiv2. For example:

[sony]
255=My wiz-bang new lens

I intend to add the web-service feature, however this ~/.exiv2 will be faster and can be customized/localized as you think best.

#28 - 07 May 2016 18:59 - Robin Mills

- Status changed from Resolved to Closed

Files

19mm.tar.gz_part_aa	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_ab	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_ac	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_ad	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_ae	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_af	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_ag	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_ah	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_ai	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_aj	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_ak	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_al	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_am	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_an	19 MB	14 Jan 2016	Rodrigo De Leon
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19mm.tar.gz_part_ap	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_aq	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_ar	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_as	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_at	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_au	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_av	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_aw	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_ax	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_ay	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_az	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_ba	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_bb	19 MB	14 Jan 2016	Rodrigo De Leon
19mm.tar.gz_part_bc	4.44 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_aa	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_ab	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_ac	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_ad	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_ae	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_af	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_ag	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_ah	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_ai	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_aj	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_ak	19 MB	14 Jan 2016	Rodrigo De Leon

30mm.tar.gz_part_al	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_am	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_an	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_ao	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_ap	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_aq	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_ar	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_as	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_at	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_au	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_av	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_aw	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_ax	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_ay	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_az	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_ba	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_bb	19 MB	14 Jan 2016	Rodrigo De Leon
30mm.tar.gz_part_bc	10.4 MB	14 Jan 2016	Rodrigo De Leon