

Exiv2 - Bug #1204

Add missing detail to canonCsEasyMode in canonmn.cpp

12 Aug 2016 06:15 - Sridhar Boovaraghavan

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|---|-----------------------|------------------------|-------------|
| Status: | Assigned | Start date: | 12 Aug 2016 |
| Priority: | Normal | Due date: | |
| Assignee: | Sridhar Boovaraghavan | % Done: | 0% |
| Category: | metadata | Estimated time: | 6.00 hours |
| Target version: | 0.28 | | |
| Description | | | |
| [From http://www.sno.phy.queensu.ca/~phil/exiftool/TagNames/Canon.html] | | | |
| 0 = Full auto | | | |
| 1 = Manual | | | |
| 2 = Landscape | | | |
| 3 = Fast shutter | | | |
| 4 = Slow shutter | | | |
| 5 = Night | | | |
| 6 = Gray Scale | | | |
| 7 = Sepia | | | |
| 8 = Portrait | | | |
| 9 = Sports | | | |
| 10 = Macro | | | |
| 11 = Black & White | | | |
| 12 = Pan focus | | | |
| 13 = Vivid | | | |
| 14 = Neutral | | | |
| 15 = Flash Off | | | |
| 16 = Long Shutter | | | |
| 17 = Super Macro | | | |
| 18 = Foliage | | | |
| 19 = Indoor | | | |
| 20 = Fireworks | | | |
| 21 = Beach | | | |
| 22 = Underwater | | | |
| 23 = Snow 24 = Kids & Pets | | | |
| 25 = Night Snapshot | | | |
| 26 = Digital Macro | | | |
| 27 = My Colors | | | |
| 28 = Movie Snap | | | |
| 29 = Super Macro 2 | | | |
| 30 = Color Accent | | | |
| 31 = Color Swap | | | |
| 32 = Aquarium | | | |
| 33 = ISO 3200 | | | |
| 34 = ISO 6400 | | | |
| 35 = Creative Light Effect | | | |
| 36 = Easy | | | |
| 37 = Quick Shot | | | |
| 38 = Creative Auto | | | |
| 39 = Zoom Blur | | | |
| 40 = Low Light | | | |
| 41 = Nostalgic | | | |
| 42 = Super Vivid | | | |
| 43 = Poster Effect | | | |
| 44 = Face Self-timer | | | |
| 45 = Smile | | | |
| 46 = Wink Self-timer | | | |
| 47 = Fisheye Effect 48 = Miniature Effect | | | |
| 49 = High-speed Burst | | | |
| 50 = Best Image Selection | | | |
| 51 = High Dynamic Range | | | |
| 52 = Handheld Night Scene | | | |

53 = Movie Digest
54 = Live View Control
55 = Discreet
56 = Blur Reduction
57 = Monochrome
58 = Toy Camera Effect
59 = Scene Intelligent Auto
60 = High-speed Burst HQ
61 = Smooth Skin
62 = Soft Focus
257 = Spotlight
258 = Night 2
259 = Night+
260 = Super Night
261 = Sunset
263 = Night Scene
264 = Surface
265 = Low Light 2

Associated revisions

Revision 4438 - 26 Aug 2016 05:36 - Sridhar Boovaraghavan

This is mainly a fix for #1206, but also interprets missing Canon Exif Tags in exiv2 with the help of Phil Harvey's exiftool (see <http://www.sno.phy.queensu.ca/~phil/exiftool/TagNames/Canon.html>).

Even with these changes (toward #1204 and #1205), exiv2 lags behind exiftool in some areas of interpretation of Canon tags. Ideally, a catch-up effort to bring the code in source: canonmn.cpp in line with lib/Image/ExifTool/Canon.pm. v10.25 of exiftool was used as reference for this change.

#1206 seeks to address the fact that when Canon does not have data for certain tags, they use specific default values in those fields. These default values need to be ignored and not displayed. This change brings this feature to exiv2, something that already exiftool does.

With regards to implementation, the struct TagInfo in source: tags.hpp is extended with four new fields.

The first field is a bool that if set to true (default false), denotes that this field has ignorable default values.

The second field is the default value that needs to be ignored. This can be of four types (String, Long, Float, Rational). These four types were chosen as they had conversion functions in the Value class.

The third field is the comparison type (default equal_to). There are six comparison types possible (equal_to, not_equal_to, less, less_equal, greater, greater_equal). This is the comparison applied to the value stored in the tag's field and the default value specified above. For e.g. if the value in the tag Exif.CanonCs.RecordMode is -1, then it needs to be ignored.

The fourth field is the data type (default Long). This could have been guessed from the type of the second field, but that would necessitate making this structure into a template calling for changes in multitude of files.

Usage: In source: canonmn.cpp, several exif tags now have ignorable default properties. I will list a few examples.

```
1. Exif.CanonCs.FocusMode: TagInfo(0x0007, "FocusMode", N_("Focus Mode"), N_("Focus mode setting"), canonCsId, makerTags, signedShort, 1, EXV_PRINT_TAG(canonCsFocusMode)),
```

There are no changes - i.e. this is an example of how the TagInfo structure was being populated.

```
2. Exif.CanonCs.RecordMode: TagInfo(0x0009, "RecordMode", N_("Record Mode"), N_("Record mode setting"), canonCsId, makerTags, signedShort, 1, EXV_PRINT_TAG(canonCsRecordMode), true, s_1_),
```

Take a look at the two new arguments. The first one (true) specifies

that there is a default value that can be ignored. The second one `s_1_` specifies the value (-1, in this case) to be ignored.

```
const UShortValue CanonMakerNote::s_1_(65535, unsignedShort); // Till bug is resolved
```

Note `s_1_` is temporarily having the value 65535 till #1203 that causes `signedShorts` to be interpreted as `unsignedShorts` is resolved.

3. `Exif.CanonSi.TargetAperture: TagInfo(0x0004, "TargetAperture", N_("Target Aperture"), N_("Target Aperture"), canonSild, makerTags, unsignedShort, 1, printSi0x0015, true, us0_, TagInfo::less_equal),`

Note the third argument `TagInfo::less_equal`. This combined with the second argument `us0_` (the number 0) signifies that any values in this tag that are less than or equal (`<=`) to 0 should be ignored.

4. `TagInfo(0x0028, "ImageUniqueID", N_("Image Unique ID"), N_("Image Unique ID"), canonId, makerTags, asciiString, -1, printValue, true, s0x16_, TagInfo::equal_to, TagInfo::String),`

The previous examples have all been of Long type. This shows a case where the default value is a string.

```
const AsciiValue CanonMakerNote::s0x16_("0000000000000000");
```

Once these tag values have been defined, the actual mechanics of ignoring these default values happens in `Image::exifData()`.

Before the `exifData` is returned, we loop through the data, ask the data whether it needs to be ignored (which in turn checks its underlying `tagInfo` and compares it with the default value, if specified) and if so, deletes that element.

A compile-time switch called `EXV_DONT_IGNORE_UNDEFINED` which when set to a non-zero value will cause the behavior to revert back to the original where all values are reported irregardless of the fact that they need to be ignored.

History

#1 - 12 Aug 2016 06:28 - Sridhar Boovaraghavan

Also add

`canonCsAfPoint`
`0x4006 = Face Detect`

`canonCsExposureProgram,`
`7 = Bulb`

`canonCsImageStabilization`
`3 = Panning`
`4 = Dynamic`
`256 = Off (2)`
`257 = On (2)`
`258 = Shoot Only (2)`
`259 = Panning (2)`
`260 = Dynamic (2)`

#2 - 12 Aug 2016 08:47 - Robin Mills

- *Category set to metadata*
- *Status changed from New to Assigned*
- *Assignee set to Robin Mills*
- *Target version set to 0.28*
- *Estimated time set to 2.00 h*

#3 - 12 Aug 2016 13:30 - Robin Mills

- *Assignee changed from Robin Mills to Sridhar Boovaraghavan*
- *Estimated time changed from 2.00 h to 6.00 h*

Sridhar

This is your chance for Fame and Fortune (not). Have a look at [#1202](#). This is a little more complicated because you'll have to provide a handler for the new data structure you provide for these settings. And you should add something to the test suite for this. I'll update the test suite for [#1202](#) and you'll can see what I did.

Good Luck. I'll help whenever you ask. If you want to talk 1-to-1 on Skype/Hangout/FaceTime let me know. When I have 1-to-1s with Team Members, it's usually Saturday afternoon in England.

#4 - 30 Aug 2016 16:12 - Robin Mills

Development of this feature has been deferred for v0.27 and to be developed in branches/develop. [r4449](#)