

## Exiv2 - Bug #1202

### Exif.CanonCs.FocusContinuous = 8 = Manual

11 Aug 2016 11:20 - Sridhar Boovaraghavan

<b>Status:</b>	Closed	<b>Start date:</b>	11 Aug 2016
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>	Robin Mills	<b>% Done:</b>	100%
<b>Category:</b>	makernote	<b>Estimated time:</b>	3.00 hours
<b>Target version:</b>	0.26		
<b>Description</b>			
<p>Please change it to signed short (follows your documentation, see <a href="http://www.exiv2.org/tags-canon.html">http://www.exiv2.org/tags-canon.html</a>) and it is being interpreted as an unsignedShort in the code. 65535 is the unsigned short version of -1 (signedShort).</p> <p>For reference, exiftool reports -1.</p> <p>All indications are that this is a bug in exiv2. It not being raised in 8 years possibly just means that no one was interested in that tag till now.</p> <p>As to what -1 actually means, that's a different question. I was proposing that we interpret -1 to mean Single (i.e. the same as zero).</p> <p>I also propose that you add the value 8 to count as Manual (following exiftool, please see <a href="http://www.sno.phy.queensu.ca/~phil/exiftool/TagNames/Canon.html">http://www.sno.phy.queensu.ca/~phil/exiftool/TagNames/Canon.html</a>). Worth noticing that it is treated as signed short.</p> <p>For testing purposes, one could use exiv2's test files itself. Try exiv2\test\data\exiv2-test.out(Line #2697). See that it reports (65535) whereas it should be a -1.</p> <p>Regards, Sridhar</p>			
<b>Related issues:</b>			
Related to Exiv2 - Bug #1203: Exif.CanonCs.FocusContinuous reported as Short		<b>Assigned</b>	<b>11 Aug 2016</b>

#### Associated revisions

##### Revision 4365 - 11 Aug 2016 14:34 - Robin Mills

#1202 Adding "Manual" Exif.CanonCs.FocusContinuous

##### Revision 4370 - 13 Aug 2016 09:10 - Robin Mills

#1202 Update test suite. The test jpg was originally test/tmp/20030925\_201850.jpg

#### History

##### #1 - 11 Aug 2016 14:34 - Robin Mills

- Category set to makernote
- Status changed from New to Resolved
- Assignee set to Robin Mills
- Priority changed from High to Normal
- Target version set to 0.26
- % Done changed from 0 to 100
- Estimated time set to 3.00 h

I've looked carefully at this. I'm not convinced that there is a bug here. Here's my point of view. I've modified the code (change below) and the output is now as you request:

```
$ exiv2 -pa -K Exif.CanonCs.FocusContinuous ~gnu/exiv2/trunk/test/tmp/20030925_201850.jpg
Exif.CanonCs.FocusContinuous      Short      1      (-1)
818 rmills@rmillsmbp:~/gnu/exiv2/trunk $
```

However you will observe that the type of the data in "Short" and not "SShort". The fix requires me to introduce a bug in the code in tags\_int.hpp#226

```

template <int N, const TagDetails (&array) [N]>
std::ostream& printTag(std::ostream& os, const Value& value, const ExifData*)
{
    const TagDetails* td = find(array, value.toLong());
    if (td) {
        os << exvGettext(td->label_);
    }
    else {
        if ( value.typeId() == unsignedShort ) {
            signed short v = (signed short) value.toLong();

            os << "(" << v << ")";
        } else {
            os << "(" << value << ")";
        }
    }
    return os;
}

```

So the question is "Why is value being delivered as Short and not an SShort?". The tag is defined as signedShort in canonmn.cpp#1134.

```

TagInfo(0x0020, "FocusContinuous"
, N_("Focus Continuous"), N_("Focus continuous setting")
, canonCsId, makerTags, signedShort, 1
, EXV_PRINT_TAG(canonCsFocusContinuous)),

```

So, I believe there is something in the data in the file itself which overrules the default definition.

I didn't write Exiv2, and there are parts of the code which I have never explored. The decoding of MakerNotes is one of those black holes.

There is a less brutal change that could be made to the code in tags\_int.hpp:

```
const TagDetails* td = find(array, value.toLong());
```

This code reads the tag definition from canonmn.cpp and therefore can discover that although `value.typeId() == 3 == unsignedShort`, its default is **signedShort** and should be converted.

My background is writing compilers and interpreters. I strongly dislike this kind of hack. If the data type is recorded by Canon as unsignedShort, it is not the job of Exiv2 to change it on the fly. I will not submit such a change (nor the hack in this report). I've tried setting the type explicitly and this is not successful.

```

824 rmills@rmillsmbp:~/gnu/exiv2/trunk $ exiv2 -M"set Exif.CanonCs.FocusContinuous SShort -1" cs.jpg
825 rmills@rmillsmbp:~/gnu/exiv2/trunk $ exiv2 -pa -K Exif.CanonCs.FocusContinuous cs.jpg
Exif.CanonCs.FocusContinuous          Short      1 (65535)
826 rmills@rmillsmbp:~/gnu/exiv2/trunk $ exiv2 -M"set Exif.CanonCs.FocusContinuous Short -1" cs.jpg
Warning: Exif.CanonCs.FocusContinuous: Failed to read Short value "-1"

```

The road to resolving this is for me to master the Canon MakerNote decoder and I don't have time to undertake that at the moment. If Andreas wrote that code and can give further insight, that would be very helpful.

I do have another constructive change to make here concerning 8 = Manual. I have submitted that change: [r4365](#)

```

822 rmills@rmillsmbp:~/gnu/exiv2/trunk $ cp /Users/rmills/gnu/exiv2/trunk/test/tmp/20030925_201850.jpg cs.jpg
823 rmills@rmillsmbp:~/gnu/exiv2/trunk $ exiv2 -pa -K Exif.CanonCs.FocusContinuous cs.jpg
Exif.CanonCs.FocusContinuous          Short      1 (65535)
827 rmills@rmillsmbp:~/gnu/exiv2/trunk $ exiv2 -M"set Exif.CanonCs.FocusContinuous Short 8" cs.jpg
828 rmills@rmillsmbp:~/gnu/exiv2/trunk $ exiv2 -pa -K Exif.CanonCs.FocusContinuous cs.jpg
Exif.CanonCs.FocusContinuous          Short      1 Manual
829 rmills@rmillsmbp:~/gnu/exiv2/trunk $ exiv2 -pv -K Exif.CanonCs.FocusContinuous cs.jpg
0x0020 CanonCs          FocusContinuous          Short      1 8

```

I'm not sure I've understood your comment about interpreting -1 as Single. If we don't know the meaning of -1, we shouldn't invent a meaning.

As I am trying to get closed on v0.26, I'm don't have time to investigate the SShort/Short contradiction at this time. I'm therefore marking this as "Resolved".

## #2 - 11 Aug 2016 15:10 - Sridhar Boovaraghavan

Hi Robin,

Thanks for looking into this at short notice.

I agree that the "hack" that returns -1 is not the right fix to do.

I also agree with the addition of 8 (Manual).

However, would you mind keeping the bug open or another bug that tries to resolve the -1 issue?

You don't need to target that bug for 0.26, but a later version and assign it to someone else that could look at it/possibly Andreas? (I didn't have any luck in contacting him about another matter a while back regarding VS2015 projects).

Thanks,  
Sridhar

**#3 - 11 Aug 2016 15:45 - Robin Mills**

- Subject changed from *Exif.CanonCs.FocusContinuous comes out as unsigned short to Exif.CanonCs.FocusContinuous = 8 = Manual*
- Status changed from *Resolved to Closed*

Thanks for opening issue [#1203](#) to deal with the SShort/Short contradiction. I'll deal with this in v0.27.

Can you confirm that you are happy to value -1/63535 is not translated as "Single".

**#4 - 12 Aug 2016 03:02 - Sridhar Boovaraghavan**

Yes, I am fine with -1 not being translated as Single for now.

Let us address it as part of <http://dev.exiv2.org/issues/1203> where I have proposed a slightly different solution for it.

Thanks,  
Sridhar

**#5 - 13 Aug 2016 09:11 - Robin Mills**

[r4370](#) Update test suite.

**#6 - 14 Aug 2016 02:38 - Sridhar Boovaraghavan**

Hi Robin,

When you changed this line `TagInfo(0xffff, "(UnknownCanonCsTag)", "(UnknownCanonCsTag)", N_("Unknown Canon Camera Settings 1 tag"), canonCsId, makerTags, signedShort, 1, printValue)`

from `unsignedShort` to `signedShort`, wouldn't -1 be a better value than 0xffff?

Also, there are a few other values in that list that are `unsignedShort` - why not change them too?

Thanks,  
Sridhar

**#7 - 14 Aug 2016 05:53 - Robin Mills**

Well spotted, Sridhar. I should not have changed `canonmn.cpp` line 1238 Total blunder. I've reverted the change to line 1238 and retained the 'Manual/8' fix. [r4375](#)

I only want to deal with the 8/Manual matter in this issue. The 'generic fix' for the SShort/Short contradiction is the subject of [#1203](#). I don't have time at the moment to spend on [#1203](#) because my priority is to work with Ben on [#1199](#) and Gilles on [#1207](#) and to get v0.26 finished.

**#8 - 14 Aug 2016 06:06 - Sridhar Boovaraghavan**

Yes, that's better. Thanks.