

Nikon Corporation Type0014 vender unique capabilities

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Nikon Corporation

1. Introduction

This document explains the vendor unique capabilities, which are used by Type0014module (Type0014.md3, Type0014 module.bundle).

These definition values are defined in Maid3d1.h. Refer to the MAID 3.1 Specification for the details of capabilities.

NOTE) These unique capabilities may have different function at another module.

2. Supported camera

Type0014 module can control D810, D810A camera.

3. Vendor Unique Capabilities

The vender unique capabilities that are used by Type0014 module are described as follows.

The under line shows default value.

3.1. ImageSize

This will set the size of image. (Shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_ImageSize |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | The values which can be chosen are different by the setting Capability_CCDDDataMode、Capability_AutoDXCrop. |

【Basic Image size (JPEG/TIFF)】

| Capability_CCDDDataMode | FX format(3) | DX format(4) | 5 : 4(5) | 1.2x (6) |
|-------------------------|---------------------|---------------------|---------------------|---------------------|
| L | <u>L(7360*4912)</u> | <u>L(4800*3200)</u> | <u>L(6144*4912)</u> | <u>L(6144*4080)</u> |
| M | M(5520*3680) | M(3600*2400) | M(4608*3680) | M(4608*3056) |
| S | S(3680*2456) | S(2400*1600) | S(3072*2456) | S(3072*2040) |

【During movie live view (JPEG/TIFF)】

During movie live view, an aspect ratio changed to 16:9, so the value of this capability will be changed as follows.

| Capability_CCDDDataMode | FX format(3) | DX format(4) |
|-------------------------|---------------------|---------------------|
| L | <u>L(6720*3776)</u> | <u>L(4800*2704)</u> |
| M | M(5040*2832) | M(3600*2024) |
| S | S(3360*1888) | S(2400*1352) |

The listing values are changed by the setting of Capability_CCDDDataMode. But, when the value of Capability_AutoDXCrop is true and DX lens is attached, this capability use DX format setting without the setting of Capability_CCDDDataMode. When the value of Capability_AutoDXCrop is true but not-DX lens is attached, the setting of Capability_CCDDDataMode will be used.

The following cases, this Capability is read only.

- When Capability_CompressionLevel is “RAW”
- When Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.2. RawimageSize

This will set the raw size of image.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_RawImageSize |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | The values which can be chosen are different by the setting Capability_CCDDDataMode and Capability_AutoDXCrop. |

【Basic Image size】

| | | | | |
|-------------------------|---------------------|---------------------|---------------------|---------------------|
| Capability_AutoDXCrop | OFF | | | |
| Capability_CCDDDataMode | FX format (3) | DX format(4) | 5:4(5) | 1.2x (6) |
| L | <u>L(7360*4912)</u> | <u>L(4800*3200)</u> | <u>L(6144*4912)</u> | <u>L(6144*4080)</u> |
| S | S(3680*2456) | S(2400*1600) | S(3072*2456) | S(3072*2040) |

【During movie live view】

During movie live view, an aspect ratio changed to 16:9, so the value of this capability will be changed as follows.

| | | |
|-------------------------|---------------------|---------------------|
| Capability_CCDDDataMode | FX format(3) | DX format(4) |
| L | <u>L(6720*3776)</u> | <u>L(4800*2704)</u> |
| S | S(3360*1888) | S(2400*1352) |

The listing values are changed by the value of Capability_CCDDDataMode. But, when the value of Capability_AutoDXCrop is true and DX lens is attached, this capability use DX format setting without the value of Capability_CCDDDataMode. When the value of Capability_AutoDXCrop is true and not-DX lens is attached, the value of Capability_CCDDDataMode will be used.

Rawimage size may change according to the state of capability. When agreeing on conditions of Read-Only, the value of this capability becomes unfixed.

The following cases, this Capability is read only.

- During movie file recording
- The value of Capability_SpotWBMode is “1(ON)”.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.3. CompressionLevel

This will select the compression level of a picture. (Shooting Menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_CompressionLevel |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | JPEG Basic, <u>JPEG Normal</u> , JPEG Fine, TIFF-RGB, RAW, RAW + JPEG Basic, RAW + JPEG Normal, RAW + JPEG Fine |

This capability value does not mean current setting value, but means current control value. If [+ NEF (RAW)] function is active, this capability will returns [RAW+XXX].

The following cases, the module enumerates values which don't include "RAW"

- When the value of Capability_HDRMode is 1 (ON).

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.4. WBMode

This will select the white balance mode. (shooting menu)

| | |
|---------------------|---|
| Capability | NkMAIDCapability_WBMode |
| Object type | Source |
| ulType | kMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | NkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | <u>Auto</u> , Incandescent, Fluorescent, Sunny, Flash, Shade, Cloudy, Preset1, Preset2, Peset3, Preset4, Preset5, Preset6, Color Temperature |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.5. Sensitivity

This will select the sensitivity of camera (shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_Sensitivity |
| Object types | Source |
| ulType | kMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | the value which can be set is changed by the setting of Capability_CameraType, Capability_SensitivityInterval. |

| D810 | | |
|--|---|---|
| Capability_SensitivityInterval | | |
| 1/3 step | 1/2 step | 1 step |
| LO-1, LO-0.7, LO-0.3, 64,80, <u>100</u> , 125, 160, 200, 250, 320, 400, 500, 640, 800, 1000, 1250, 1600, 2000, 2500, 3200, 4000,5000, 6400, 8000, 10000, 12800, Hi-0.3, Hi-0.7, Hi-1.0, Hi-2.0 | LO-1, LO-0.5, 64,72, <u>100</u> , 140, 200, 280, 400, 560, 800, 1100, 1600, 2200, 3200, 4500, 6400, 9000, 12800, Hi-0.5, Hi-1.0, Hi-2.0, | LO-1, 64, <u>100</u> , 200, 400, 800, 1600, 3200, 6400, 12800, Hi-1.0, Hi-2.0, |

| D810A | | |
|--|--|--|
| Capability_SensitivityInterval | | |
| 1/3 step | 1/2 step | 1 step |
| LO-1, LO-0.7, LO-0.3, <u>200</u> , 250, 320, 400, 500, 640, 800, 1000, 1250, 1600, 2000, 2500, 3200, 4000, 5000, 6400, 8000, 10000, 12800, Hi-0.3, Hi-0.7, Hi-1.0, Hi-2.0, | LO-1, LO-0.5, <u>200</u> , 280, 400, 560, 800, 1100, 1600, 2200, 3200, 4500, 6400, 9000, 12800, Hi-0.5, Hi-1.0, Hi-2.0, | LO-1, <u>200</u> , 400, 800, 1600, 3200, 6400, 12800, Hi-1.0, Hi-2.0, |

During movie live view, the ISO sensitivity is controlled by Capability_MovieSensitivity, not this capability.

The following case, this Capability is read only.

- The value of Capability_SpotWBMode is 1 (ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.6. ResetMenuBank

This will reset the shooting menu. (shooting menu)

| | |
|---------------------|---------------------------------|
| Capability | kNkMAIDCapability_ResetMenuBank |
| Object types | Source |
| ulType | kMAIDCapType_Process |
| ulOperations | kNkMAIDCapOperation_Start |
| Data | None |

The following case, this Capability is set to read only.

- When Capability_LiveViewStatus is 1(On).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.7. MenuBank

This will select the bank of shooting menu. (shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_MenuBank |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | A, B, C, D (Default: A) |

The following case, this Capability is set to read only.

- When Capability_LiveViewStatus is 1(On).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.8. ShootingBankName

This will set the name of shooting menu bank. (shooting menu)

| | |
|--------------|--|
| Capability | kNkMAIDCapability_ShootingBankName |
| Object types | Source |
| ulType | kNkMAIDCapType_String kNkMAIDCapType_Array |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set kNkMAIDCapOperation_GetArray |
| Data | NkMAIDArray |

When the client sends to the module kNkMAIDCapOperation_GetArray, the module set string array of the name of shooting menu bank to “NkMAIDArray.pData” in order of A-D. If the client set string longer than 20 bytes, the module uses only 20 bytes from the head.

The character, which can be included in the string, is only an ASCII 90 characters in the following table. When the other character is set, the module returns an error (kNkMAIDResult_ValueOutOfBounds).

The following case, this Capability is set to read only.

- When Capability_LiveViewStatus is 1(On).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

| | | | | | | | | | | | | | | | |
|----|---|---|---|----|---|---|---|---|---|---|---|---|---|---|---|
| SP | ! | " | # | \$ | % | & | ' | (|) | * | + | , | - | . | / |
| : | ; | < | = | > | ? | @ | [|] | _ | { | } | | | | |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | | | | | |
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P |
| Q | R | S | T | U | V | W | X | Y | Z | | | | | | |
| a | b | c | d | e | f | g | h | i | j | k | l | m | n | o | p |
| q | r | s | t | u | v | w | x | y | z | | | | | | |

3.9. CompressRAWEx

This will set whether raw images are compressed. (shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_CompressRAWEx |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | one of eNkMAIDCompressRAWEx 0 : Uncompressed 1 : Compressed <u>2 : Lossless compressed</u> |

The following cases, this Capability is read only.

- The value of Capability_RawImageSize is “S”.
- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.10. WB TuneAuto

This will set the white balance adjustment when the WBMode is “Auto”. (shooting menu)

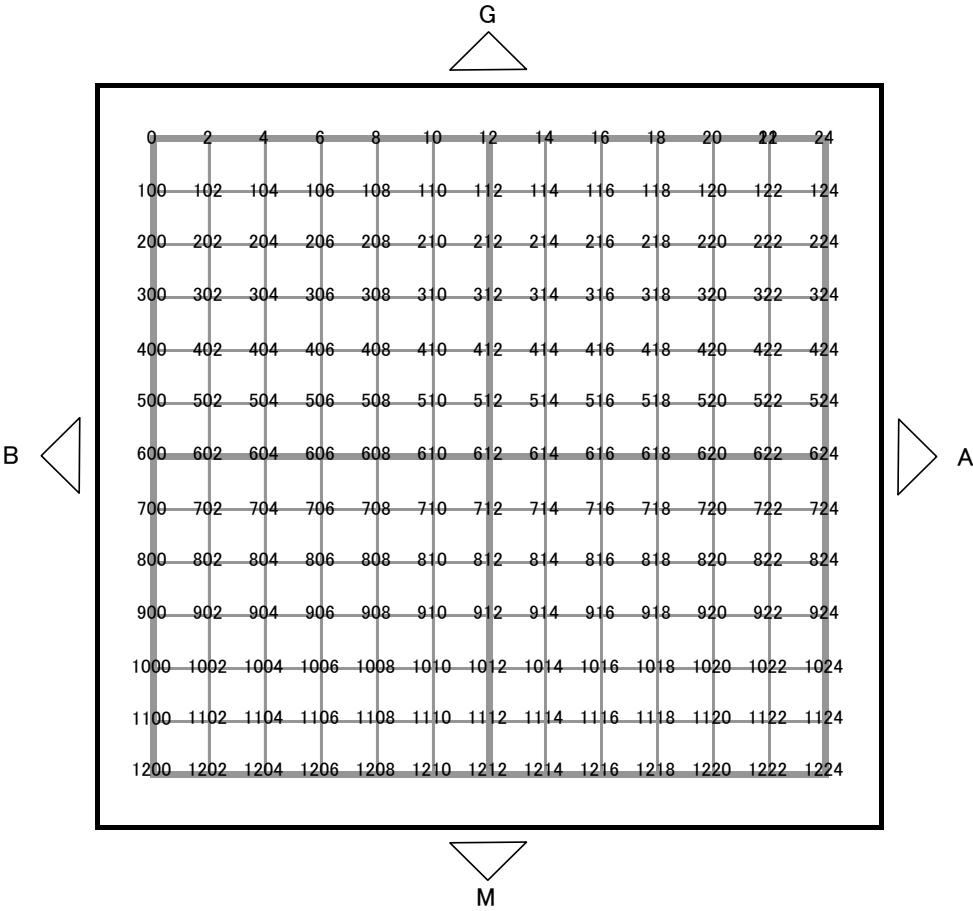
| | |
|--------------|--|
| Capability | kNkMAIDCapability_WBTuneAuto |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | 0 to 1224step=1 (Default: 612) |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1 (ON).
- During movie file recording
- When the value of Capability_ MirrorUpStatus is 1(ON). (D810A only)

The relationship between white balance adjustment value and the coordinates is shown in following figure.

A-B: 0.5step G-M:0.25step



3.11. WBAutoType

This will set the option when the white balance auto. (shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_WBAutoType |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | one of eNkWBAutoType <u>0 : Normal</u> 1 : Keep warm lighting colors |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1 (ON).
- During movie file recording
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.12. WBTuneIncandescent

This will set the white balance adjustment when the WBMode is “Incandescent”.
(shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_WBTuneIncandescent |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | 0 to 1224 step=1 (Default: 612) |

The relationship between white balance adjustment value and the coordinates is the same as the figure of Capability_WBTuneAuto.

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1 (ON).
- During movie file recording
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.13. WBFluorescentType

This will set the fluorescent type when the WBMode is “Fluorescent”. (shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_WBFluorescentType |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | one of eNkWBFluorescentType 0: Sodium-vapor lamps 1: Warm-white fluorescent 2: White fluorescent <u>3: Cool-white fluorescent</u> 4: Day white fluorescent 5: Daylight fluorescent 6: High temp. mercury-vapor |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1 (ON).
- During movie file recording
- When the value of Capability_ MirrorUpStatus is 1(ON). (D810A only)

3.14. WBTuneFluorescent

This will set the white balance adjustment when the WBMode is “Fluorescent”.
(shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_WBTuneFluorescent |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | 0 to 1224 step=1 (Default: 612) |

The relationship between white balance adjustment value and the coordinates is the same as the figure of Capability_WBTuneAuto.

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1 (ON).
- During movie file recording
- When the value of Capability_ MirrorUpStatus is 1(ON). (D810A only)

3.15. WBTuneSunny

This will set the white balance adjustment when the WBMode is “Sunny”. (shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_WBTuneSunny |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | 0 to 1224 step=1 (Default: 612) |

The relationship between white balance adjustment value and the coordinates is the same as the figure of Capability_WBTuneAuto.

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1 (ON).
- During movie file recording
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.16. WBTuneFlash

This will set the white balance adjustment when the WBMode is “Flash”. (shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_WBTuneFlash |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | 0 to 1224 step=1 (Default: 612) |

The relationship between white balance adjustment value and the coordinates is the same as the figure of Capability_WBTuneAuto.

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1 (ON).
- During movie file recording
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.17. WBTuneShade

This will set the white balance adjustment when the WBMode is “Shade”. (shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_WBTuneShade |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | 0 to 1224 step=1 (Default: 612) |

The relationship between white balance adjustment value and the coordinates is the same as the figure of Capability_WBTuneAuto.

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1 (ON).
- During movie file recording
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.18. WBTuneCloudy

This will set the white balance adjustment when the WBMode is “Cloudy”. (shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_WBTuneCloudy |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | 0 to 1224 step=1 (Default: 612) |

The relationship between white balance adjustment value and the coordinates is the same as the figure of Capability_WBTuneAuto.

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1 (ON).
- During movie file recording
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.19. WB Tune Color Temp Ex

This will set the color temperature when the WB Mode is “Color Temperature”.
(shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_WBTuneColorTempEx |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | 2500 to 10000 step=10 (Default: 5000) |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1 (ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.20. WB Tune Color Adjust

This will set the white balance adjustment when the WB Mode is “Color Temperature”.
(shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_WBTuneColorAdjust |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | 0 to 48 step=1 (Default: 24) |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1 (ON).
- During movie file recording
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.21. WB TunePreset1

This will set the white balance adjustment when the WBMode is “Preset1”.
(shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_WBTunePreset1 |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | 0 to 1224 step=1 (Default: 612) |

The relationship between white balance adjustment value and the coordinates is the same as the figure of Capability_WBTuneAuto.

The following cases, this Capability is read only.

- When the value of Capability_WBTunePresetProtect1 is “1(ON)”.
- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.22. WB TunePreset2

This will set the white balance adjustment when the WBMode is “Preset2”. (shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_WBTunePreset2 |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | 0 to 1224 step=1 (Default: 612) |

The relationship between white balance adjustment value and the coordinates is the same as the figure of Capability_WBTuneAuto.

The following cases, this Capability is read only.

- When the value of Capability_WBTunePresetProtect2 is “1(ON)”.
- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.23. WB TunePreset3

This will set the white balance adjustment when the WBMode is “Preset3”.
(shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_WBTunePreset3 |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | 0 to 1224 step=1 (Default: 612) |

The relationship between white balance adjustment value and the coordinates is the same as the figure of Capability_WBTuneAuto.

The following cases, this Capability is read only.

- When the value of Capability_WBTunePresetProtect3 is “1(ON)”.
- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.24. WB TunePreset4

This will set the white balance adjustment when the WBMode is “Preset4”.
(shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_WBTunePreset4 |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | 0 to 1224 step=1 (Default: 612) |

The relationship between white balance adjustment value and the coordinates is the same as the figure of Capability_WBTuneAuto.

The following cases, this Capability is read only.

- When the value of Capability_WBTunePresetProtect4 is “1(ON)”.
- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.25. WB TunePreset5

This will set the white balance adjustment when the WBMode is “Preset5”.

(shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_WBTunePreset5 |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | 0 to 1224 step=1 (Default: 612) |

The relationship between white balance adjustment value and the coordinates is the same as the figure of Capability_WBTuneAuto.

The following cases, this Capability is read only.

- When the value of Capability_WBTunePresetProtect5 is “1(ON)”.
- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.26. WB TunePreset6

This will set the white balance adjustment when the WBMode is “Preset6”.

(shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_WBTunePreset6 |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | 0 to 1224 step=1 (Default: 612) |

The relationship between white balance adjustment value and the coordinates is the same as the figure of Capability_WBTuneAuto.

The following cases, this Capability is read only.

- When the value of Capability_WBTunePresetProtect6 is “1(ON)”.
- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.27. WBPresetProtect1

This will set the protection of white balance preset 1. (shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_WBPresetProtect1 |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDWBPresetProtect1 <u>0: Off</u> 1: On |

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.28. WBPresetProtect2

This will set the protection of white balance preset 2. (shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_WBPresetProtect2 |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDWBPresetProtect2 <u>0: Off</u> 1: On |

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.29. WBPresetProtect3

This will set the protection of white balance preset 3. (shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_WBPresetProtect3 |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDWBPresetProtect3 <u>0: Off</u> 1: On |

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.30. WBPresetProtect4

This will set the protection of white balance preset 4. (shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_WBPresetProtect4 |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDWBPresetProtect4 <u>0: Off</u> 1: On |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.31. WBPresetProtect5

This will set the protection of white balance preset 5. (shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_WBPresetProtect5 |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDWBPresetProtect5 <u>0: Off</u> 1: On |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.32. WBPresetProtect6

This will set the protection of white balance preset 6. (shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_WBPresetProtect6 |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDWBPresetProtect6 <u>0: Off</u> 1: On |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.33. WBPresetsNumber

This will set the preset number referenced by the Capability_PreCapture, Capability_WBGainRed, Capability_WBGainBlue. (shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_WBPresetsNumber |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | <u>Preset 1</u> , Preset 2, Preset 3, Preset 4, Preset5, Preset6 |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.34. WBPresetName

This will set the name of white balance preset data. (shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_WBPresetName |
| Object types | Source |
| ulType | kNkMAIDCapType_String kNkMAIDCapType_Array |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetArray |
| Data | NkMAIDArray |

When the client sends to the module kNkMAIDCapOperation_GetArray, the module set string array of the name of white balance preset data to “NkMAIDArray.pData” in order of preset1-6.

When set to the white balance preset data with Capability_WBPresetProtectX setting is On(1), this capability returns kNkMAIDResult_NotSupported.

If the client set string longer than 36 bytes, the module uses 36 bytes from the head.

The character, which can be included in the string, is only an ASCII 90 characters.(refer to the table in the ShootingBankName.)

When the other character is set, the module returns an error (kNkMAIDResult_ValueOutOfBounds).

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.35. WBPresetCodeData

This will set the white balance preset data to the camera. (shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_WBPresetCodeData |
| Object types | Source |
| ulType | kNkMAIDCapType_Generic |
| ulOperations | kNkMAIDCapOperation_Set |
| Data | <div>pointer to NkMAIDWBPresetCodeData structure</div> <div>typedef struct tagNkMAIDWBPresetCodeData</div> <div>{</div> <div> ULONG ulPresetNumber;----- preset number (1-6)</div> <div> ULONG ulPresetGain;----- gain value</div> <div> ULONG ulThumbnailSize;----- the thumbnail size set to</div> <div> “pThumbnailData”</div> <div> ULONG ulThumbnailRotate;-- (This member is not used)</div> <div> void* pThumbnailData;----- the pointer to the thumbnail data to be</div> <div> set.} NkMAIDWBPresetCodeData, FAR* LPNkMAIDWBPresetCodeData;</div> |

When the client sends kNkMAIDCapOperation_Set to the module, the client must to set all the member of “NkMAIDWBPresetCodeData” structure without “ulThumbnailRotate”.

When the client sends kNkMAIDCapOperation_Get to the module, the client must set “ulPresetNumber”, and the module sets the gain value to “ulPresetGain” correspondence with the number of “ulPresetNumber”.

The member “ulThumbnailSize” and “pThumbnailData” of “NkMAIDWBPresetCodeData” structure is used only for kNkMAIDCapOperation_Set.

The red gain value is set to the upper 2 bytes, the blue gain value is set to the lower 2 bytes of “ulPresetGain”.

The both of red and blue gain value is expressed by the 8.8 format fixed-point number. (e.g. 1.5 → gain value:0x0180) The range of gain value is $0 \leq \text{gain value} < 8$ (0x0000-0x07FF).

The thumbnail data set to “pThumbnailData” must be match the following requirement.

- The image data is Jpeg.
- The size of image is 160 x 120.
- The quality of image is Fine(1/4 compressed).
- The size of image is below 13440 bytes.

- The image cannot include the tag except the following table.

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

| | |
|-----|-----------------------------------|
| SOI | Start Of Image |
| DQT | Define Quantization Table |
| DHT | Define Huffman Table |
| SOF | Start of Frame |
| SOS | Start of Scan |
| | Entropy Coded Data (JPEG data) |
| EOI | End Of Image |

3.36. WBGainRed

This will get the gain red of white balance preset data selected by the Capability_WBPresetNumber. (shooting menu)

Capability kNkMAIDCapability_WBGainRed
Object types Source
ulType kNkMAIDCapType_Range
ulOperations kNkMAIDCapOperation_Get
Data Min: 0 Max: 7.9661 (2047/256)
Step: 0.0039 (1/256) (Default: 1)

3.37. WBGainBlue

This will get the gain blue of white balance preset data selected by the Capability_WBPresetNumber. (shooting menu)

Capability kNkMAIDCapability_WBGainBlue
Object types Source
ulType kNkMAIDCapType_Range
ulOperations kNkMAIDCapOperation_Get
Data Min: 0 Max: 7.9661 (2047/256)
Step: 0.0039 (1/256) (Default: 1)

3.38. CCDDataMode

This will set how to read data from CCD. (Shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_CCDDataMode |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | one of eNkMAIDCCDDataMode |

| |
|-------------|
| 3: FXformat |
| 4: DXformat |
| 5: 5 : 4 |
| 6: 1.2x |

When Capability_AutoDXCrop is true and DX lens is attached, this capability will keep the current value though current setting will be changed to DX format internally.

The Capability_LiveViewStatus is 1(ON), the ulOperations of this capability is set to read only.

Or: "5:4 5" in the movie live view: If you Set the "6 1.2x", the kNkMAIDResult_ValueOutOfBounds) error.

The following cases, this Capability is read only.

- When Capability_AutoDXCrop is true and DX lens is attached.
- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.39. AutoDXCrop

This will set auto DX crop. (Shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_AutoDXCrop |
| Object types | Source |
| ulType | kNkMAIDCapType_Boolean |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | <u>True: On</u> False: Off |

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_ MirrorUpStatus is 1(ON). (D810A only)

3.40. JpegCompressionPolicy

This will set the algorithm when image data is compressed to Jpeg data. (Shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_JpegCompressionPolicy |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | one of eNkMAIDJpegCompressionPolicy <u>0: Size priority</u> 1: Optimal quality |

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_ MirrorUpStatus is 1(ON). (D810A only)

3.41. ImageColorSpace

This will set color space. (Shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_ImageColorSpace |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | one of eNkMAIDImageColorSpace <u>0: sRGB,</u> 1: AdobeRGB |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.42. IsoControl

This will set whether auto sensitivity control is used when you take a picture. (Shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_IsoControl |
| Object types | Source |
| ulType | kNkMAIDCapType_Boolean |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | True: used <u>False: not used</u> |

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.43. NoiseReduction

This will set whether noise reduction is used or not used. (Shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_NoiseReduction |
| Object types | Source |
| ulType | kNkMAIDCapType_Boolean |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | True: used <u>False: not used</u> |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1 (ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.44. NoiseReductionHighISO

This will set whether noise reduction is used or not used when high ISO. (Shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_NoiseReductionHighISO |
| Object type | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | one of eNkMAIDNoiseReductionHighISO 0: OFF <u>1: ON (Normal)</u> 2: ON (High) 3: ON (Low) |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1 (ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.45. Slot2ImageSaveMode

This will select the role of secondary card slot. (Shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_Slot2ImageSaveMode |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDSlot2ImageSaveMode <u>0: Overflow</u> 1: Backup 2: RAW Slot 1 – JPEG Slot 2 |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1 (ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.46. CompressRAWBitMode

This will select bit depth for RAW(NEF). (Shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_CompressRAWBitMode |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDCompressRAWBitMode 0: 12-bit <u>1: 14-bit</u> |

The following cases, this Capability is read only.

- The value of Capability_RawImageSize is “S”.
- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.47. PictureControl

This will select Picture Control. (Shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_PictureControl |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDPictureControl 0: Undefined Picture Control <u>1: Standard</u> 2: Neutral 3: Vivid 4: Monochrome 5: Portrait 6: Landscape 7: Flat 201 - 209: Custom Picture Control 1 - 9 |

This capability shows the current selected Picture Control.

When the client sends kNkMAIDCapOperation_GetArray, the module returns the all Picture control enumeration value including unused Custom Picture Control.

The client can know whether the Picture Control is used or not by checking “CustomFlag” in Picture Control Data format.(see Capability_PictureControldata)

When the client sends kNkMAIDCapOperation_Set with unused Picture Control, the module returns kNkMAIDResult_DeviceBusy.

When the Picture Control selected currently is changed, kNkMAIDEvent_CapChangeValueOnly is issued about this capability. And when the content of Picture Control data is changed, kNkMAIDEvent_CapChange is issued about Capability_ChangedPictureControl.

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.48. ChangedPictureControl

This will enumerate the Picture Control item, which is the content, is changed.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_ChangedPictureControl |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, |
| Data | one of eNkMAIDPictureControl |

When the Picture Control is modified by the following factor, this capability reports the list of modified Picture Control to the client by kNkMAIDCapOperation_GetArray.

- The Picture Control was changed by edit.
- The Custom Picture Control was saved.
- The Custom Picture Control was deleted.
- The Custom Picture Control was renamed.

The current value of this capability shows the last modified Picture Control.

After the client gets the list of modified Picture Control by kNkMAIDCapOperation_GetArray, the module resets the enumeration data and the current value of this capability will be reset to 0, and the list of modified Picture Control will be deleted.

When the Picture Control is reset, kNkMAIDEvent_CapChange is not issued.

3.49. PictureControlData

This will set the assigned Picture Control data of the first generation. And this will get Picture Control data of the second generation. (Shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_PictureControlData |
| Object types | Source |
| ulType | kNkMAIDCapType_Generic |
| ulOperations | kNkMAIDCapOperation_Set, kNkMAIDCapOperation_Get kNkMAIDCapOperation_GetDefault |
| Data | pointer to NkMAIDPicCtrlData structure typedef struct tagNkMAIDPicCtrlData { ULONG ulPicCtrlItem;----- The target Picture Control ULONG ulSize;-----The size of Picture Control data (Max: 610 bytes) bool bModifiedFlag; -----Modification flag(false: initial registration, true: edit) void* pData;----- The pointer of Picture Control data. } NkMAIDPicCtrlData, FAR* LPNkMAIDPicCtrlData; |

The range of value sets to “ulPicCtrlItem” is enumerated by Capability_PictureControl.

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

[In case of Set]

When the client sends kNkMAIDCapOperation_Set, the client must set the all the member of NkMAIDPicCtrlData.

If “bModifiedFlag” is false (initial registration), the module updates the current value and default value of Picture Control, by the content of “pData”. If “bModifiedFlag” is true (edit), the module updates the current value of Picture Control only, by the content of “pData”. The limitations at Set are as follows.

- If “ulPicCtrlItem” is Standard(1), Neutral(2), Vivid(3), Monochrome(4), Portrait(5),Landscape(6), bModifiedFlag must be set to true(edit).
- If “ulPicCtrlItem” is Custom Picture Control(201 - 209), the “CustomFlag”

of Picture Control data must be set to custom (1).

- □“RegistrationName” will not be used when “ulPicCtrlItem” is Standard(1), Neutral(2), Vivid(3), Monochrome(4), Portrait(5), Landscape(6).
- If “ulPicCtrlItem” is Neutral(2), Custom Picture Control(201 - 209), the
- “QuickAdjustFlag” of Picture Control data must be set to invalid (0).
- □If “ulPicCtrlItem” is Monochrome(4), “MonochromeFlag” of Picture Control data must be set to monochrome (1). If “ulPicCtrlItem” is not Monochrome(4), “MonochromeFlag” of Picture Control data must be set to color(0).
- When “MonochromeFlag” is changed, bModifiedFlag must be set to false(initial registration).
- If the “QuickAdjustFlag” of Picture Control data is valid (1), the camera determines each setting by referring “QuickAdjust” of Picture Control data, and does not refer the other settings. If “QuickAdjustFlag” of Picture Control data is invalid (0), the camera determines each setting by referring the other settings, and does not refer “QuickAdjust” of Picture Control data.
- If “CustomCurveFlag” of picture control data is used (1), the client have to set Custom Picture Control(201 - 209) to “ulPicCtrlItem”.
- If you want to setting the Picture Control data of the first generation, you have to use this Capability. In the case of you want to setting the Picture Control data of the second generation, you have to use PictureControlDataEx.

[In case of Get]

When the client sends kNkMAIDCapOperation_Get, the client must set the maximum Picture Control data size, 610, to "ulSize", and set the allocation space for 610 bytes to "pData".

The module sets the size of the picture control data actually set to “pData” to “ulSize” when succeeding in acquisition.

It is possible to get Picture Control data about unused Picture Control data.

The client can know whether the Picture Control data is used or not by referring “CustomFlag”. The format of the Picture Control data is shown below.

This Capability will get only Picture Control data of the second generation.

[Color] First generation

| Field | Size (Byte) | Data |
|------------------|-------------|--|
| PicCtrlItem | 1 | type of Picture Control 1: Standard 2: Neutral 3: Vivid 4: Monochrome 5: Portrait 6: Landscape In case of Custom Picture Control, set the base Picture Control. |
| MonochromeFlag | 1 | Monochrome Flag 0: color 1: monochrome |
| CustomFlag | 1 | Custom Flag 0 : Standard 1 : Custom 2 : Unused custom |
| RegistrationName | 20 | Registration name of Picture Control The string data is 20 byte fixation, and null terminated. (19 characters in actual.) |
| QuickAdjustFlag | 1 | Quick Adjust Flag 0: invalid 1: valid In case of ulPicCtrlItem of NkMAIDPicCtrlData is Neutral or Custom Picture Control, it is 0 fixation. |
| QuickAdjust | 1 | Quick Adjust value -2 to +2 |
| Saturation | 1 | Saturation -3 to +3 -128 is Auto |
| Hue | 1 | Hue -3 to +3 |
| Sharpening | 1 | Sharpening 0 to 9 |

| | | |
|-----------------|-----|--|
| | | -128 is Auto |
| Contrast | 1 | <p>Contrast</p> <p>-3 to +3 -128 is Auto</p> <p>If CustomCurveData is used, this setting is not referred, and if kNkMAIDCapability_Active_D_Lighting is not set to [3. off], this setting is not used.</p> |
| Brightness | 1 | <p>Brightness</p> <p>-1 to +1</p> <p>If CustomCurveData is used, this setting is not referred, and if kNkMAIDCapability_Active_D_Lighting is not set to [3. off], this setting is not used.</p> |
| CustomCurveFlag | 1 | <p>Custom Curve Flag</p> <p>0: No Custom Curve</p> <p>1: Custom Curve used</p> |
| CustomCurveData | 578 | <p>Custom Curve Data</p> <p>This data is not added when there is no Custom Curb.</p> <p>[Header] 64 byte + [LUT] 257x 2 byte = 578 byte</p> <p>Refer to "LUT format" for details.</p> <p>If kNkMAIDCapability_Active_D_Lighting is not [3. off], this setting is not used.</p> |

[Monochrome] First generation

| Field | Size (Byte) | Data |
|----------------|-------------|--|
| PicCtrlItem | 1 | <p>type of Picture Control</p> <p>1: Standard</p> <p>2: Neutral</p> <p>3: Vivid</p> <p>4: Monochrome</p> <p>In case of Custom Picture Control, set the base Picture Control.</p> |
| MonochromeFlag | 1 | <p>Monochrome Flag</p> <p>0: color</p> <p>1: monochrome</p> |
| CustomFlag | 1 | <p>Custom Flag</p> <p>0 : Standard</p> <p>1 : Custom</p> |

| | | |
|------------------|----|---|
| | | 2 : Unused custom |
| RegistrationName | 20 | Registration name of Picture Control The string data is 20 byte fixation, and null terminated. (19 characters in actual.) |
| FilterEffects | 1 | Filter Effect 0: None 1: Yellow 2: Orange 3: Red 4: Green |
| Toning | 1 | Toning(ToneColor) 0:B&W 1:Sepia 2:Cyanotype 3:Red 4:Yellow 5:Green 6:Blue Green 7:Blue 8:Purple Blue 9:Red Purple |
| ToningDensity | 1 | Toning(Level)(1Step) 1 to 7 |
| Reserve | 1 | vacant |
| Sharpening | 1 | Sharpening(1Step) 0 to 9 -128 is Auto |
| Contrast | 1 | Contrast(1Step) -3 to +3 -128 is Auto If CustomCurveData is used, this setting is not referred, and if kNkMAIDCapability_Active_D_Lighting is not set to [3. off], this setting is not used. |
| Brightness | 1 | Brightness(1Step) -1 to +1 If CustomCurveData is used, this setting is not referred, and |

| | | |
|-----------------|-----|---|
| | | if kNkMAIDCapability_Active_D_Lighting is not set to [3. off], this setting is not used. |
| CustomCurveFlag | 1 | Custom Curve Flag 0 : No Custom Curve 1 : Custom Curve used |
| CustomCurveData | 578 | Custom Curve Data This data is not added when there is no Custom Curb. [Header] 64 byte + [LUT] 257x 2 byte = 578 byte Refer to "LUT format" for details. If kNkMAIDCapability_Active_D_Lighting is not [3. off], this setting is not used. |

[Color] Second generation

| Field | Size (Byte) | Data |
|------------------|-------------|--|
| PicCtrlItem | 1 | type of Picture Control 1: Standard 2: Neutral 3: Vivid 4: Monochrome 5: Portrait 6: Landscape In case of Custom Picture Control, set the base Picture Control. |
| MonochromeFlag | 1 | Monochrome Flag 0: color 1: monochrome |
| CustomFlag | 1 | Custom Flag 0 : Standard 1 : Custom 2 : Unused custom |
| RegistrationName | 20 | Registration name of Picture Control The string data is 20 byte fixation, and null terminated. (20 characters in actual.) |
| QuickAdjustFlag | 1 | Quick Adjust Flag 0: invalid 1: valid |

| | | |
|-----------------|-----|---|
| | | In case of ulPicCtrlItem of NkMAIDPicCtrlData is Neutral or Custom Picture Control, it is 0 fixation. |
| QuickAdjust | 1 | Quick Adjust value (1step) -2 to +2 |
| Saturation | 1 | Saturation (0.25step) -3 to +3 -128 is Auto |
| Hue | 1 | Hue (0.25step) -3 to +3 |
| Sharpening | 1 | Sharpening (0.25step) 0 to 9 -128 is Auto |
| Contrast | 1 | Contrast (0.25step) -3 to +3 -128 is Auto |
| Brightness | 1 | Brightness (0.25step) -1.5 to +1.5 |
| Clarity | 1 | Clarity (0.25step) -5 ~ +5 -128:Auto |
| CustomCurveFlag | 1 | Custom Curve Flag (0.25step) 0: No Custom Curve 1: Custom Curve used |
| CustomCurveData | 578 | Custom Curve Data This data is not added when there is no Custom Curb. [Header] 64 byte + [LUT] 257x 2 byte = 578 byte Refer to "LUT format" for details. If kNkMAIDCapability_Active_D_Lighting is not [3. off], this setting is not used. |

[Monochrome] Second generation

| Field | Size (Byte) | Data |
|-------------|-------------|---|
| PicCtrlItem | 1 | type of Picture Control 1: Standard 2: Neutral 3: Vivid 4: Monochrome |

| | | |
|------------------|----|---|
| | | 5: Portrait 6: Landscape In case of Custom Picture Control, set the base Picture Control. |
| MonochromeFlag | 1 | Monochrome Flag 0: color 1: monochrome |
| CustomFlag | 1 | Custom Flag 0 : Standard 1 : Custom 2 : Unused custom |
| RegistrationName | 20 | Registration name of Picture Control The string data is 20 byte fixation, and null terminated. (19 characters in actual.) |
| FilterEffects | 1 | Filter Effect 0: None 1: Yellow 2: Orange 3: Red 4: Green |
| Toning | 1 | Toning(ToneColor) 0:B&W 1:Sepia 2:Cyanotype 3:Red 4:Yellow 5:Green 6:Blue Green 7:Blue 8:Purple Blue 9:Red Purple |
| ToningDensity | 1 | Toning(Level)(0.25step) 1 to 7 When Toning is B&W, this is not referd. |
| Reserve | 1 | vacant |
| Sharpening | 1 | Sharpening (0.25step) |

| | | |
|-----------------|-----|---|
| | | 0 to 9 -128 is Auto |
| Contrast | 1 | Contrast (0.25step) -3 to +3 -128 is Auto |
| Brightness | 1 | Brightness (0.25step) -1.5 to +1.5 |
| Clarity | 1 | Clarity (0.25step) -5 ~ +5 -128:Auto |
| CustomCurveFlag | 1 | Custom Curve Flag (0.25step) 0 : No Custom Curve 1 : Custom Curve used |
| CustomCurveData | 578 | Custom Curve Data This data is not added when there is no Custom Curb. [Header] 64 byte + [LUT] 257x 2 byte = 578 byte Refer to "LUT format" for details. If kNkMAIDCapability_Active_D_Lighting is not [3. off], this setting is not used. |

I will show below the value to set the format of the picture control data and the value that identifies the camera.

The street below for value settings for each step width.

[In case of step width of 0.25]

| Picture Control Format | Value that identifies the camera |
|------------------------|----------------------------------|
| -20 | -5 |
| -19 | -4.75 |
| -18 | -4.5 |
| -17 | -4.25 |
| -16 | -4 |
| -15 | -3.75 |
| -14 | -3.5 |
| -13 | -3.25 |
| -12 | -3 |
| -11 | -2.75 |
| -10 | -2.5 |
| -9 | -2.25 |
| -8 | -2 |
| -7 | -1.75 |
| -6 | -1.5 |
| -5 | -1.25 |

| | |
|----|-------|
| -4 | -1 |
| -3 | -0.75 |
| -2 | -0.5 |
| -1 | -0.25 |
| 0 | 0 |
| 1 | 0.25 |
| 2 | 0.5 |
| 3 | 0.75 |
| 4 | 1 |
| 5 | 1.25 |
| 6 | 1.5 |
| 7 | 1.75 |
| 8 | 2 |
| 9 | 2.25 |
| 10 | 2.5 |
| 11 | 2.75 |
| 12 | 3 |
| 13 | 3.25 |
| 14 | 3.5 |
| 15 | 3.75 |
| 16 | 4 |
| 17 | 4.25 |
| 18 | 4.5 |
| 19 | 4.75 |
| 20 | 5 |
| 21 | 5.25 |
| 22 | 5.5 |
| 23 | 5.75 |
| 24 | 6 |
| 25 | 6.25 |
| 26 | 6.5 |
| 27 | 6.75 |
| 28 | 7 |
| 29 | 7.25 |
| 30 | 7.5 |
| 31 | 7.75 |
| 32 | 8 |
| 33 | 8.25 |
| 34 | 8.5 |
| 35 | 8.75 |
| 36 | 9 |

[In case of step width of 1]

| Picture Control Format | Value that identifies the camera |
|------------------------|----------------------------------|
| -3 | -3 |
| -2 | -2 |
| -1 | -1 |
| 0 | 0 |
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |
| 6 | 6 |

| | |
|---|---|
| 7 | 7 |
| 8 | 8 |
| 9 | 9 |

[LUT format]

LUT data is composed from LUT and LUT header. LUT is 2048 byte 11 bit * 8 bit, LUT header is 64 byte and is used by host. LUT header format is original specification by host, and the camera is not concerned of the content of LUT header. But, the top 2 byte of LUT header is used for camera to judge LUT header exist or not. So, the client has to set LUT header.

| Byte | contents |
|--------|--------------|
| 0, 1 | Length(2116) |
| 2, 3 | Reserved |
| 4 ~ 67 | Lut Header |
| 68 | Data0 |
| 69 | Data1 |
| ... | |
| 2115 | Data2047 |

[LUT header format]

The content of the LUT header set by the application made of Nikon is shown below as the example.

| Byte | contents | Range |
|---------|-----------------------------|--------------|
| 1 | AriaID (Byte1) | 0x49 |
| 2 | AriaID (Byte2) | 0x30 |
| 3 | Input Minimum (Black Point) | 0-255 |
| 4 | Input Maximum | 0-255 |
| 5 | Output Minimum | 0-255 |
| 6 | Output Maximum | 0-255 |
| 7 | Gamma (integer portion) | 0-20 |
| 8 | Gamma (fractional portion) | 0-100 |
| 9 | Number of Spline Points | 2-20 |
| 10, 11 | Splime Point1 (x, y) | 0-255, 0-255 |
| 12, 13 | Splime Point2 (x, y) | 0-255, 0-255 |
| ... | | |
| 48, 49 | Splime Point20 (x, y) | 0-255, 0-255 |
| 50 ~ 64 | Reserved | 0 |

3.50. PictureControlDataEx

This will get or set the assigned Picture Control data of the second generation.

(Shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_PictureControlDataEx |
| Object types | Source |
| ulType | kNkMAIDCapType_Generic |
| ulOperations | kNkMAIDCapOperation_Set, kNkMAIDCapOperation_Get kNkMAIDCapOperation_GetDefault |
| Data | pointer to NkMAIDPicCtrlData structure typedef struct tagNkMAIDPicCtrlData { ULONG ulPicCtrlItem;----- The target Picture Control ULONG ulSize;-----The size of Picture Control data (Max: 610 bytes) bool bModifiedFlag; -----Modification flag(false: initial registration, true: edit) void* pData;----- The pointer of Picture Control data. } NkMAIDPicCtrlData, FAR* LPNkMAIDPicCtrlData; |

The range of value sets to “ulPicCtrlItem” is enumerated by
Capability_PictureControl.

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

The following cases, refer to Capability_PictureControlData.

- In case of set
- How to use in case of get
- The format of picture control
- The format of LUT

3.51. GetPicCtrlInfo

This will get the Picture Control information.(Shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_GetPicCtrlInfo |
| Object types | Source |
| ulType | kNkMAIDCapType_Generic |
| ulOperations | kNkMAIDCapOperation_Get |
| Data | pointer to NkMAIDGetPicCtrlInfo structure typedef struct tagNkMAIDGetPicCtrlInfo { ULONG ulPicCtrlItem;-----The target Picture Control ULONG ulSize;-----The size of Picture Control information (39bytes fixation) void* pData;-----The pointer of Picture Control information. } NkMAIDGetPicCtrlInfo, FAR* LPNkMAIDGetPicCtrlInfo; |

The client must set the all the member of NkMAIDGetPicCtrlInfo.

The value range of Picture Control set to “ulPicCtrlItem” is enumerated by Capability_PictureControl.

The Picture Control information is valid when “ulPicCtrlItem” is color.

If “ulPicCtrlItem” is monochrome or there is no picture control of base, the Picture Control information will be all 0.

The format of the Picture Control information is shown below

[Picture Control information]

| Offset | Size | Field | Data | Description | |
|--------|------|-------------------|--|---|---------------|
| 0x00 | 1 | ValidFlag | 0 : invalid 1 : valid | It shows whether the data valid or invalid. When there is no base Picture Control or when it is monochrome, this value is 0. | |
| 0x01 | 1 | QuickCapa | 0x80 : selectable 0x01 : AUTO usable 0x81 : selectable & AUTO usable | Quick Adjust setting. | |
| 0x02 | 1 | SharpenessCapa | 0x80 : selectable 0x01 : AUTO usable 0x81 : selectable & AUTO usable | Sharpening setting | |
| 0x03 | 1 | ClarityCapa | 0x80 : selectable 0x01 : AUTO usable 0x81 : selectable & AUTO usable | Articulation setting | |
| 0x04 | 1 | ContrastCapa | 0x80 : selectable 0x01 : AUTO usable 0x81 : selectable & AUTO usable | Contrast setting | |
| 0x05 | 1 | BrightnessCapa | 0x80 : selectable 0x01 : AUTO usable 0x81 : selectable & AUTO usable | Brightness setting | |
| 0x06 | 1 | SaturationCapa | 0x80 : selectable 0x01 : AUTO usable 0x81 : selectable & AUTO usable | Saturation setting | |
| 0x07 | 1 | HueCapa | 0x80 : selectable 0x01 : AUTO usable 0x81 : selectable & AUTO usable | Hue setting | |
| 0x08 | 1 | DefaultQuickLevel | -2~+2 | Quick Adjust default value | |
| 0x09 | 1 | DefaultLevel[0] | 0~9 | Quick Adjust -2 | Sharpening |
| 0x0A | 1 | | -5~+5 | | Aarticulation |
| 0x0B | 1 | | -3~+3 | | Contrast |
| 0x0C | 1 | | -1.5~+1.5 | | Brightness |
| 0x0D | 1 | | -3~+3 | | Saturation |
| 0x0E | 1 | | -3~+3 | | Hue |
| 0x0F | 1 | DefaultLevel[1] | 0~9 | Quick Adjust -1 | Sharpening |
| 0x10 | 1 | | -5~+5 | | Aarticulation |
| 0x11 | 1 | | -3~+3 | | Contrast |
| 0x12 | 1 | | -1.5~+1.5 | | Brightness |
| 0x13 | 1 | | -3~+3 | | Saturation |
| 0x14 | 1 | | -3~+3 | | Hue |

| | | | | | |
|------|---|-----------------|-----------|-------------------|---------------|
| 0x15 | 1 | DefaultLevel[2] | 0～+9 | Quick Adjust 0 | Sharpening |
| 0x16 | 1 | | -5～+5 | | Aarticulation |
| 0x17 | 1 | | -3～+3 | | Contrast |
| 0x18 | 1 | | -1.5～+1.5 | | Brightness |
| 0x19 | 1 | | -3～+3 | | Saturation |
| 0x1A | 1 | | -3～+3 | | Hue |
| 0x1B | 1 | DefaultLevel[3] | 0～9 | Quick Adjust 1 | Sharpening |
| 0x1C | 1 | | -5～+5 | | Aarticulation |
| 0x1D | 1 | | -3～+3 | | Contrast |
| 0x1E | 1 | | -1.5～+1.5 | | Brightness |
| 0x1F | 1 | | -3～+3 | | Saturation |
| 0x20 | 1 | | -3～+3 | | Hue |
| 0x21 | 1 | DefaultLevel[4] | 0～+9 | Quick Adjust 2 | Sharpening |
| 0x22 | 1 | | -5～+5 | | Aarticulation |
| 0x23 | 1 | | -3～+3 | | Contrast |
| 0x24 | 1 | | -1.5～+1.5 | | Brightness |
| 0x25 | 1 | | -3～+3 | | Saturation |
| 0x26 | 1 | | -3～+3 | | Hue |

3.52. DeleteCustomPictureControl

This will delete Custom Picture Control. (Shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_DeleteCustomPictureControl |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Set |
| Data | Custom Picture Control Item |

When the client set the one of Custom Picture Control enumerated by

Capability_PictureControl and executes kNkMAIDCapOperation_Set, the specified Custom Picture Control will be deleted.

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.53. Active_D_Lighting

This will set Active D-Lighting. (Shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_Active_D_Lighting |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | one of meNkMAIDActive_D_Lighting |

| |
|-----------------|
| 0: High |
| 1: Normal |
| 2: Low |
| <u>3: Off</u> |
| 5: Extra high 1 |
| 6: Auto |

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.54. ISOAutoShutterTime

This will set the shutter speed when ISO is controlled automatically. (Shooting menu)

Capability kNkMAIDCapability_ISOAutoShutterTime

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set

Data one of eNkMAIDISOAutoShutterTime

| Shutter speed | eNkMAIDISOAutoShutterTime | Shutter speed | eNkMAIDISOAutoShutterTime |
|---------------|---------------------------|---------------|---------------------------|
| 1/4000 | 20 | 1/80 | 17 |
| 1/3200 | 21 | 1/60 | 1 |
| 1/2500 | 22 | 1/50 | 19 |
| 1/2000 | 23 | 1/40 | 18 |
| 1/1600 | 24 | 1/30 | 2 |
| 1/1250 | 25 | 1/15 | 3 |
| 1/1000 | 26 | 1/8 | 4 |
| 1/800 | 27 | 1/4 | 5 |
| 1/640 | 28 | 1/2 | 6 |
| 1/500 | 29 | 1 | 7 |
| 1/400 | 30 | 2 | 8 |
| 1/320 | 31 | 4 | 9 |
| 1/250 | 13 | 8 | 10 |
| 1/200 | 14 | 15 | 11 |
| 1/160 | 15 | 30 | 12 |
| 1/125 | 0 | <u>Auto</u> | 32 |
| 1/100 | 16 | | |

The following cases, this Capability is read only.

- The value of Capability_IsoControl is OFF.
- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.55. ISOAutoShutterTimeAutoValue

This will set compensation value when the value of kNkMAIDCapability_ISOAutoShutterTime is 32(Auto). (Shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_ISOAutoShutterTimeAutoValue |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | -2~+2EV(Default value: 0) |

This capability is valid when the value of Capability_IsoControl is ON and the value of Capability_ISOAutoShutterTimeAutoValue is 32(Auto).

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.56. ISOAutoHiLimit

This will set the max sensitivity when ISO is controlled automatically. (Shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_ISOAutoHiLimit |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDISOAutoHiLimit4 |

| D810 | | | | |
|------------------------|--------|---------------------|-----|---|
| eNkMAIDISOAutoHiLimit4 | ISO | SensitivityInterval | | |
| | | 1/3 | 1/2 | 1 |
| 0 | 72 | × | ○ | × |
| 1 | 80 | ○ | × | × |
| 2 | 100 | ○ | ○ | ○ |
| 3 | 125 | ○ | × | × |
| 4 | 140 | × | ○ | × |
| 5 | 160 | ○ | × | × |
| 6 | 200 | ○ | ○ | ○ |
| 7 | 250 | ○ | × | × |
| 8 | 280 | × | ○ | × |
| 9 | 320 | ○ | × | × |
| 10 | 400 | ○ | ○ | ○ |
| 11 | 500 | ○ | × | × |
| 12 | 560 | × | ○ | × |
| 13 | 640 | ○ | × | × |
| 14 | 800 | ○ | ○ | ○ |
| 15 | 1000 | ○ | × | × |
| 16 | 1100 | × | ○ | × |
| 17 | 1250 | ○ | × | × |
| 18 | 1600 | ○ | ○ | ○ |
| 19 | 2000 | ○ | × | × |
| 20 | 2200 | × | ○ | × |
| 21 | 2500 | ○ | × | × |
| 22 | 3200 | ○ | ○ | ○ |
| 23 | 4000 | ○ | × | × |
| 24 | 4500 | × | ○ | × |
| 25 | 5000 | ○ | × | × |
| 26 | 6400 | ○ | ○ | ○ |
| 27 | 8000 | ○ | × | × |
| 28 | 9000 | × | ○ | × |
| 29 | 10000 | ○ | × | × |
| 30(Default) | 12800 | ○ | ○ | ○ |
| 31 | Hi-0.3 | ○ | × | × |
| 32 | Hi-0.5 | × | ○ | × |
| 33 | Hi-0.7 | ○ | × | × |
| 34 | Hi-1.0 | ○ | ○ | ○ |
| 35 | Hi-2.0 | ○ | ○ | ○ |

| D810A | | | | |
|------------------------|--------|---------------------|-----|---|
| eNkMAIDISOAutoHiLimit2 | 制御上限感度 | SensitivityInterval | | |
| | | 1/3 | 1/2 | 1 |
| 0 | 400 | ○ | ○ | ○ |
| 1 | 500 | ○ | × | × |
| 2 | 560 | × | ○ | × |
| 3 | 640 | ○ | × | × |
| 4 | 800 | ○ | ○ | ○ |
| 5 | 1000 | ○ | × | × |
| 6 | 1100 | × | ○ | × |
| 7 | 1250 | ○ | × | × |
| 8 | 1600 | ○ | ○ | ○ |
| 9 | 2000 | ○ | × | × |
| 10 | 2200 | × | ○ | × |
| 11 | 2500 | ○ | × | × |
| 12 | 3200 | ○ | ○ | ○ |
| 13 | 4000 | ○ | × | × |
| 14 | 4500 | × | ○ | × |
| 15 | 5000 | ○ | × | × |
| 16 | 6400 | ○ | ○ | ○ |
| 17 | 8000 | ○ | × | × |
| 18 | 9000 | × | ○ | × |
| 19 | 10000 | ○ | × | × |
| 20(Default) | 12800 | ○ | ○ | ○ |
| 21 | Hi-0.3 | ○ | × | × |
| 22 | Hi-0.5 | × | ○ | × |
| 23 | Hi-0.7 | ○ | × | × |
| 24 | Hi-1.0 | ○ | ○ | ○ |
| 25 | Hi-2.0 | ○ | ○ | ○ |

The actually assignable value changes by setting Capability_SensitivityInterval and the assignable value follows a value of Capability_Sensitivity.

When the invalid value is set, this capability returns
kNkMAIDResult_ValueOutOfBounds.

The following cases, this Capability is read only.

- The value of Capability_IsoControl is OFF.
- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.57. VignetteControl

This will set the Vignette control. (Shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_VignetteControl |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDVignetteControl 0: High <u>1: Normal</u> 2: Low 3: Off |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.58. MovieScreenSize

This will set the value “Frame size/frame rate” of “Movie settings”. (Shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_MovieScreenSize |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDMovieScreenSize6 |

| eNkMAIDMovieScreenSize6 | size | Frame rate |
|-------------------------|------------------|------------|
| 0 | 1920×1080 | 60p |
| 1 | 1920×1080 | 50p |
| <u>2</u> | <u>1920×1080</u> | <u>30p</u> |
| 3 | 1920×1080 | 25p |
| 4 | 1920×1080 | 24p |
| 5 | 1280×720 | 60p |
| 6 | 1280×720 | 50p |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.59. MovieImageQuality

This will set the value “Movie quality” of “Movie settings”. (Shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_MovieImageQuality |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDMovieImageQuality <u>0: Normal</u> 1: High quality |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.60. MovieRecMicrophone

This will set the value “Microphone” of “Movie settings”. (Shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_MovieRecMicrophone |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDMovRecMicrophone <u>0: Auto sensitivity (A)</u> 4: Microphone off 5: Manual sensitivity |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.61. MovieRecMicrophoneValue

This will set the microphone sensitivity when Capability_MovieRecMicrophone is manual sensitivity. (Shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_MovieRecMicrophoneValue |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | 1 to 20 step=1 (Default: 15) |

The following cases, this Capability is read only.

- When the value of Capability_MovieRecMicrophone is not 5(Manual sensitivity)
- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.62. MovieRecDestination

This will set the value “Destination” of “Movie settings”. (Shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_MovieRecDestination |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDMovRecDestination2 <u>0 : Slot 1</u> 1 : Slot 2 |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.63. PrimarySlot

This will set the shooting menu, [Primary slot selection]. (Shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_PrimarySlot |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDPrimarySlot <u>0 : Slot 1</u> 1 : Slot 2 |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.64. AutoDistortion

This will set the shooting menu, [Auto distortion control]. (Shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_AutoDistortion |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDAutoDistortion <u>0: Off</u> 1: On |

The following cases, this Capability is read only.

- When the CPU lens does not attached.
- When the lens unsupported auto distortion control is attached.
- When the value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_LiveViewPhotoShootingMode is "Silent".
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.65. HDRMode

This will set the shooting menu, [HDR(high dynamic range) - HDR mode]. (Shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_HDRMode |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDHDRMode <u>0: Off</u> 1: On(single photo) 2: On(series) |

When the Capability_ShootingMode is Cl or Ch and shooting continuously, the HDR photo will be only the first photo.

The following cases, this Capability is read only.

- Capability_EnableBracketing is ON
- Capability_CompressionLevel is RAW or RAW+ JPEG(BASIC/Normal/Fine)
- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.66. HDRExposure

This will set the shooting menu, [HDR(high dynamic range) – Exposure differential].
(Shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_HDRExposure |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDHDRExposure <u>0: Auto</u> 1: 1EV 2: 2EV 3: 3EV |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_EnableBracketing is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.67. HDRSmoothing

This will set the shooting menu, [HDR(high dynamic range) – Smoothing]. (Shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_HDRSmoothing |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDHDRSmoothing 0: High <u>1: Normal</u> 2: Low |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_EnableBracketing is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.68. CustomSettings

This will select custom settings. (CSM menu C)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_CustomSettings |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | <u>A</u> , B, C, D |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.69. CustomBankName

Set the camera to the bank name of custom. (Custom C)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_CustomBankName |
| Object types | Source |
| ulType | kNkMAIDCapType_String kNkMAIDCapType_Array |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetArray |
| Data | NkMAIDArray |

kNkMAIDCapOperation_GetArray runtime, an array of NkMAIDString, Module sets the custom bank name in the order of CustomSettings A ~ D to NkMAIDArray.pData.

If the string more than 20 bytes in custom bank name has been set, it is ignored after the first 21 bytes. Is (see table ShootingBankName) only ASCII code of 90 characters is a valid character.

If an invalid character is included, it will error and (kNkMAIDResult_ValueOutOfBounds).

The following cases, this Capability is read only

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.70. **ResetCustomSetting**

This will reset the custom settings, which is selected by Capability_CustomSettings.
(CSM menu R)

| | |
|---------------------|--------------------------------------|
| Capability | kNkMAIDCapability_ResetCustomSetting |
| Object types | Source |
| ulType | kNkMAIDCapType_Process |
| ulOperations | kNkMAIDCapOperation_Start |
| Data | None |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.71. **AFcPriority**

This will set the continuous AF area priority. (CSM menu a1)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_AFcPriority |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | |

| | |
|-----------------|----------------------|
| Focus | “AF-C Focus” |
| <u>Release</u> | “AF-C Shutter” |
| Release + focus | “AF-C Shutter/Focus” |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.72. AFsPriority

This will set the single AF area priority. (CSM menu a2)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_AFsPriority |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |

Data

| | |
|--------------|----------------|
| <u>Focus</u> | “AF-S Focus” |
| Release | “AF-S Shutter” |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.73. AFLockOnEx

This will set whether AF lock or not. (CSM menu a3)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_AFLockOnEx |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |

Data one of eNkMAIDAFLockOnEx

| |
|------------------|
| 0: Long |
| <u>1: Normal</u> |
| 2: Short |
| 3: OFF |
| 4: Long lightly |
| 5: Short lightly |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.74. AFAreaSelector

This will set that AF area selector motion is circular or not. (CSM menu a7)

Capability kNkMAIDCapability_AFAreaSelector
Object types Source
ulType kNkMAIDCapType_Enum
 kNkMAIDArrayType_PackedString
ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_ GetArray,
 kNkMAIDCapOperation_Set

Data

| | |
|---------|-----------------|
| No wrap | <u>“Normal”</u> |
| Wrap | “Cyclic” |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_ MirrorUpStatus is 1(ON). (D810A only)

3.75. AFAreaPoint

This will set AF point selection. (CSM menu a8)

Capability kNkMAIDCapability_AFAreaPoint
Object types Source
ulType kNkMAIDCapType_Unsigned
ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,
 kNkMAIDCapOperation_GetDefault
Data one of eNkMAIDAFAreaPoint

0: 51 points

1: 11 points

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_ MirrorUpStatus is 1(ON). (D810A only)

3.76. AFSubLight

Represent the irradiation set of built-in AF-assist light. (Custom a10)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_AFSubLight |
| Object types | Source |
| ulType | kNkMAIDCapType_Boolean |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | <u>True: YES</u> False: NO |

The following cases, this Capability is read only.

- Capability_SpotWBMode is 1 (ON)
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.77. LimitAFAreaMode

This will set Limit AF-area mode selection. (CSM menu a11)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_LimitAFAreaMode |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | one of eNkMAIDLimitAFAreaMode Default : 0 (All are not restricted.) |

| Bit | 値 | 内容 | 種別 |
|------|--------|--------------------------|-------------------------------------|
| Bit7 | 0x0080 | Auto-areaAF | 0: No restriction 1: Restriction |
| Bit6 | 0x0040 | Group-areaAF | 0: No restriction 1: Restriction |
| Bit5 | 0x0020 | 3D-tracking | 0: No restriction 1: Restriction |
| Bit4 | 0x0010 | 51-points dynami-area AF | 0: No restriction 1: Restriction |
| Bit2 | 0x0004 | 21-points dynami-area AF | 0: No restriction 1: Restriction |
| Bit1 | 0x0002 | 9-points dynami-area AF | 0: No restriction 1: Restriction |

About A to restrict, it sets up in logical disjunction according to the above-mentioned table.

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.78. AFModeRestrictions

This will set Autofocus mode restrictions. (CSM menu a12)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_AFModeRestrictions |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | one of eNkMAIDAFModeRestrictions <u>0 : No restriction</u> 1 : AF-S 2 : AF-C |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.79. SensitivityInterval

This will set ISO step value. (CSM menu b1)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_SensitivityInterval |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | |

| | |
|----------------|-------|
| <u>1/3step</u> | "1/3" |
| 1/2step | "1/2" |
| 1step | "1" |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.80. EVInterval

This will set the EV interval of the Capability_ShutterSpeed, Capability_Aperture, Capability_FlexibleProgram, and Capability_AEBracketingStep. (CSM menu b2)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_EVInterval |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |

Data

| | |
|----------------|------------|
| <u>1/3step</u> | "1/3 Step" |
| 1/2step | "1/2 Step" |
| 1step | "1 Step" |

When this capability is changed and Capability_BracketingVary is set to AE bracketing, Capability_AEBracketingStep will be set to 1 EV (3).

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.81. ExpCompInterval

This will set the interval exposure compensation. (CSM menu b3)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_ExpCompInterval |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |

Data

| | |
|----------------|------------|
| <u>1/3Step</u> | "1/3 Step" |
| 1/2Step | "1/2 Step" |
| 1Step | "1 Step" |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.82. CWMeteringDiameter

This will select the center weighted metering diameter. (CSM menu b6)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_CWMeteringDiameter |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |

Data

| | |
|---------|-----------|
| φ8mm | “8 mm” |
| φ12mm | “12 mm” |
| φ15mm | “15 mm” |
| φ20mm | “20 mm” |
| Average | “Average” |

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_ MirrorUpStatus is 1(ON). (D810A only)

3.83. ExpBaseMatrix

This will set the exposure base when the metering mode is matrix. (CSM menu b7)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_ExpBaseMatrix |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | -1 - +1EV (1/6EV step) (Default : 0) |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.84. ExpBaseCenter

This will set the exposure base when the metering mode is center weighted. (CSM menu b7)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_ExpBaseCenter |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | -1 - +1EV (1/6EV step) (Default : 0) |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.85. ExpBaseSpot

This will set the exposure base when the metering mode is spot. (CSM menu (CSM menu b7)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_ExpBaseSpot |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | -1 - +1EV (1/6EV step) (Default : 0) |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.86. ExpBaseHighlight

Photometry mode represents the reference exposure level at the time of the highlight-weighted metering .(Custum b7)

This will set frame rate for continuous highlow-speed(CH). (CSM menu d2)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_ExpBaseHighlight |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | -1~+1 EV (1/6EV Step) (Default : 0) |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.87. ShootingSpeed

This will set frame rate for continuous low-speed(CL). (CSM menu d2)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_ShootingSpeedHigh |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |

Data

| | |
|--------------|---------------------|
| 6 fps | "6 frames / second" |
| 5 fps | "5 frames / second" |
| 4 fps | "4 frames / second" |
| <u>3 fps</u> | "3 frames / second" |
| 2 fps | "2 frames / second" |
| 1 fps | "1 frames / second" |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.88. ShootingLimit

This will set shooting limit number in continuous shooting. (CSM menu d3)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_ShootingLimit |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | 1 - 100 (Default:100) |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.89. ExposureDelayEx

This will set exposure delay mode. (CSM menu d4)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_ExposureDelayEx |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | one of eNkMAIDExposureDelayEx 0:3 sec 1:2 sec 2:1 sec <u>3: Off</u> |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.90. ElectronicFrontCurtainShutter

Set the electronic first curtain shutter (Custom d5)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_ElectronicFrontCurtainShutter |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |

Data

| | |
|----------------|-----------|
| Enable | “Enable” |
| <u>Disable</u> | “Disable” |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.91. NumberingMode

This will select a Numbering Mode. (CSM menu d6)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_NumberingMode |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |

Data

| | |
|-----------|-----------------------------------|
| Off | “Normal filename assignment” |
| <u>On</u> | “Sequential filename assignment ” |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.92. ResetFileName

This resets the number of the file, which will be stored in CF/XQD card. (CSM menu d5)

Capability kNkMAIDCapability_ResetFileName

Object types Source

ulType kNkMAIDCapType_Process

ulOperations kNkMAIDCapOperation_Start

Data None

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.93. FlashSyncTime

This will set flash sync speed on shooting with speedlight. (CSM menu e1)

Capability kNkMAIDCapability_FlashSyncTime

Object types Source

ulType kNkMAIDCapType_Enum

kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set

Data

| | |
|--------------------|-----------------------|
| 1/320 秒 (AutoFP) | “1/320 sec (FP Auto)” |
| 1/250 sec (AutoFP) | “1/250 sec (FP Auto)” |
| <u>1/250 sec</u> | “1/250 sec” |
| 1/200 sec | “1/200 sec” |
| 1/160 sec | “1/160 sec” |
| 1/125 sec | “1/125 sec” |
| 1/100 sec | “1/100 sec” |
| 1/80 sec | “1/80 sec” |
| 1/60 sec | “1/60 sec” |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.94. FlashSlowLimit

This will set the lowest shutter speed on shooting with speedlight. (CSM menu e2)

Capability kNkMAIDCapability_FlashSlowLimit

Object types Source

ulType kNkMAIDCapType_Enum

kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

| | |
|-----------------|------------|
| <u>1/60 sec</u> | "1/60 sec" |
| 1/30 sec | "1/30 sec" |
| 1/15 sec | "1/15 sec" |
| 1/8 sec | "1/8 sec" |
| 1/4 sec | "1/4 sec" |
| 1/2 sec | "1/2 sec" |
| 1 sec | "1 sec" |
| 2 sec | "2 sec" |
| 4 sec | "4 sec" |
| 8 sec | "8 sec" |
| 15 sec | "15 sec" |
| 30 sec | "30 sec" |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.95. InternalSplMode

Represent - "built-in flash / external flash flash · BKT Shooting" custom menu.
(Custom e3)

Capability kNkMAIDCapability_InternalSplMode
Object types Source
ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString
ulOperations kNkMAIDCapOperation_Get,
kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

| | |
|----------------------|-------------------|
| TTL mode | “TTL” |
| Manual flash mode | “Manual” |
| Repeating flash mode | “Repeating Flash” |
| Comander mode | “Command” |

When mounted the external Speedlite new communication of power ON state (no operation setting display member), it is limited to three items, "TTL", "Manual", "Command" value of this property.

However, Capability_ExternalFlashSort 4: If you have installed an external flash commander mode not supported and if new communication (no operation setting display member), the two items of "TTL", "Manual" The value of this property is limited.

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.96. BracketingVary

This will select the bracketing variation.(CSM menu e6)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_BracketingVary |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |

Data

| | |
|-----------------------|------------------|
| AE bracketing | “AE Only” |
| Flash only | “Flash Only” |
| <u>AE & flash</u> | “AE & Flash” |
| WB bracketing | “White Balance” |
| ADLbracketing | “ADL bracketing” |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.97. BracketingFactor

This will select the bracketing variation on manual mode. (CSM menu e7)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_BracketingFactor |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |

Data

| | |
|----------------------|--|
| <u>Flash/speed</u> | “Exposure time + TTL control” |
| Flash/speed/aperture | “Exposure time + Aperture + TTL control” |
| Flash/aperture | “Aperture + TTL control” |
| Flash only | “TTL control” |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.98. BracketingOrder

This will select the bracketing order. (CSM menu e8)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_BracketingOrder |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |

Data

| | |
|-------------------|---------------------------|
| [0] -> [-] -> [+] | “Same as Auto Bracketing” |
| [-] -> [0] -> [+] | “Negative to Positive” |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_ MirrorUpStatus is 1(ON). (D810A only)

3.99. ShutterSpeedLockSetting

This represents when you press the button the assigned "lock function of shutter speed and aperture", the setting of the shutter speed lock function.

This will set the function of ShutterSpeed lock. (CSM menu f7)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_ShutterSpeedLockSetting |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | one of eNkMAIDShutterSpeedLockSetting <u>0 : Off</u> 1 : On |

The following cases, this Capability is read only.

- The value of Capability_ExposureMode is "Program" or "Aperture Priority".
- Bulb warning
- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- Sequence error occurs
- Warning in the minimum aperture
- In the case of ShutterPriority, Capability_ExposureMode If the True, and Capability_RetractableLensWarningStatus
- i-TTL warning in
- SB setting error
- BUSY warning
- Card full warning
- The card access error
- The card is not format error
- In the preview
- The mirror up the first release
- The displayed preset manual acquisition result
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.100. ApertureLockSetting

This will set the function of Aperture lock. (CSM menu f7)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_ApertureLockSetting |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | one of eNkMAIDApertureLockSetting <u>0 : Off</u> 1 : On |

The following cases, this Capability is read only.

- Capability_ExposureMode is Program or ShutterSpeed Priority.
- Bulb warning
- Is set to false in Capability_ApertureDial mounted in the lens with an aperture ring.
- CPU lens is not attached
- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- In the case of Sequence error occurs.
- In the case of Warning in the minimum aperture.
- In the case of ShutterPriority, Capability_ExposureMode is True, and Capability_RetractableLensWarningStatus.
- I-TTL warning.
- In the case of SB setting error.
- In the case of BUSY warning .
- In the case of card full warning.
- In the case of the card access error.
- In the case of the card is not format error.
- In the case of preview.
- In the case of the mirror up the first release.
- In the case of the displayed preset manual acquisition result.
- When the value of Capability_ MirrorUpStatus is 1(ON). (D810A only)

3.101. ApertureDial

This will set whether to use sub-command dial to operate aperture. (CSM menu f9)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_ApertureDial |
| Object types | Source |
| ulType | kNkMAIDCapType_Boolean |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set kNkMAIDCapOperation_GetDefault |
| Data | <u>True: use</u> False: Not use (Default: True) |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.102. ShootNoCard

This will set disable to shoot when a CF/XQD card is not install. (CSM menu f11)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_ShootNoCard |
| Object types | Source |
| ulType | kNkMAIDCapType_Boolean |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set kNkMAIDCapOperation_GetDefault |
| Data | <u>True: Enable to shoot</u> False: Disable |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.103. MovieReleaseButton

This will set the function assigned for shutter button during movie live view. (CSM menu g4)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_MovieReleaseButton |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDMovieReleaseButton <u>0: Take photos</u> 1: Record movies |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.104. UserComment

This will set a description of an image. (SETUP)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_UserComment |
| Object types | Source |
| ulType | kNkMAIDCapType_String |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | String shorter than 36 bytes (not including termination '¥0') |

If the client set string longer than 36 bytes, the module uses 36 bytes from the head.

The character, which can be included in the string, is only an ASCII characters in the following table. When the other character is set, the module returns an error (kNkMAIDResult_ValueOutOfBounds).

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.105. EnableComment

This will enable to add UserComment to an image file. (SETUP)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_EnableComment |
| Object types | Source |
| ulType | kNkMAIDCapType_Boolean |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | True: Enable <u>False: Disable</u> |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.106. CameraInclinationMode

This will set whether add or not rotate information to the image file. (SETUP)

| | | |
|---------------------|---|----------------|
| Capability | kNkMAIDCapability_CameraInclinationMode | |
| Object types | Source | |
| ulType | kNkMAIDCapType_Boolean | |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault | |
| Data | <u>True: Add</u> | False: not Add |

When the value of this capability is set to False, the Capability_CameraInclination is always zero (Level).

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.107. ClockDateTime

This will set the built-in clock of camera. (SETUP)

| | | |
|---------------------|--|--|
| Capability | kNkMAIDCapability_ClockDateTime | |
| Object types | Source | |
| ulType | kNkMAIDCapType_DateTime | |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set | |
| Data | kNkMAIDDataType_DateTimePtr | |

The following cases, this Capability is read only.

- When Capability_LiveViewStatus is 1(On)
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.108. ManualSetLensNo

This will set the number of the lens referred to by Capability_FmmManual and Capability_F0Manual. (SETUP)

| | | |
|---------------------|---|--|
| Capability | kNkMAIDCapability_ManualSetLensNo | |
| Object types | Source | |
| ulType | kNkMAIDCapType_Unsigned | |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault | |
| Data | 0 - 8 (Default : 0) | |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.109. FmmManual

This will set the focal length[mm] of the lens specified by
kNkMAIDCapability_ManualSetLensNo. (SETUP)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_FmmManual |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | 0(N/A), 6, 8, 13, 15, 16, 18, 20, 24, 25, 28, 35, 43, 45, 50, 55, 58, 70, 80, 85, 86, 100, 105, 135, 180, 200, 300, 360, 400, 500, 600, 800, 1000, 1200,1400, 1600, 2000, 2400, 2800, 3200, 4000 (Default: 0) |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.110. F0Manual

This will set the maximum aperture of the lens specified by
kNkMAIDCapability_ManualSetLensNo. (SETUP)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_F0Manual |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | 0(N/A), 12, 14, 18, 20, 25, 28, 33, 35, 40, 45, 50, 56, 63, 71, 80, 95, 110, 130 150,160 190, 220 (Default: 0) |

This capability returns the aperture value multiplied by 10.
(e.g.: If aperture is F1.2 , the module returns 12, if aperture is F19, returns 190)
The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.111. EnableCopyright

This will set whether attach copyright information. (SETUP)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_EnableCopyright |
| Object types | Source |
| ulType | kNkMAIDCapType_Boolean |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | True: attach <u>False: none</u> |

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.112. ArtistName

This will set the artist information. (SETUP)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_ArtistName |
| Object types | Source |
| ulType | kNkMAIDCapType_String |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | String shorter than 36 bytes (not including termination '¥0') |

If the client set string longer than 36 bytes, the module uses 36 bytes from the head, and the space (0x20) before termination '¥0' of string will be ignored.
for example.)

ABCD□EFG□□□□□□□□'¥0'

□ shows a space(0x20) , so 8 space is ignored.

The character, which can be included in the string, is only an ASCII 90 characters. (refer to the table in the ShootingBankName.) When the other character is set, the module returns an error (kNkMAIDResult_ValueOutOfBounds).

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.113. CopyrightInfo

This will set the copyright information. (SETUP)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_CopyrightInfo |
| Object types | Source |
| ulType | kNkMAIDCapType_String |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | String shorter than 54 bytes (not including termination ‘\0’) |

If the client set string longer than 54 bytes, the module uses 54 bytes from the head, and the space(0x20) before termination ‘\0’ of string will be ignored.

for example.)

ABCD EFG 8 spaces ‘\0’

□ shows a space(0x20) , so 8 space is ignored.

The character, which can be included in the string, is only an ASCII 90 characters. (refer to the table in the ShootingBankName.) When the other character is set, the module returns an error (kNkMAIDResult_ValueOutOfBounds).

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.114. ShutterSpeed

This will set the shutter speed.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_ShutterSpeed |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | Strings of shutter time in second. (e.g.) "1", "1/1.3", "1/1.6", ... "1/4000" "x 1/250", "x 1/200", "x 1/160", "x 1/125",... "x 1/60" |

Capability_MovieShutterSpeed is used for shutter speed setting during movie live view.

When during live view photography, this Capability is used.

When the Capability_ExternalFlashStatus is not "Not Exist", the maximum shutter speed value is limited to the Capability_FlashSyncTime setting and the array data is changed.

When the Capability_ExposureMode is set to "Program", "Aperture priority", the minimum shutter speed value is limited to the Capability_FlashSlowLimit setting. When the array data is changed, the module sends to the client kMAIDEvent_CapChange.

The following cases, this capability cannot set Bulb and Time.

- The value of Capability_ExposureMode is except "Manual".
- The value of Capability_HDRMode id except "Off".

The following cases, this capability is read only.

- The value of Capability_ExposureMode is "Program", or "Aperture Priority"
- The value of Capability_ShutterSpeedLockSetting is "1(On)".
- The value of Capability_SpotWBMode is 1(ON).
- The value of Capability_ExposureMode is "Manual", the value of Capability_EnableBracketing is "ON", the value of Capability_BracketingVary is "AE Only", or "AE & Flash", and when "speed" is contained in the value of Capability_BracketingFactor.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

When sequence error has occurred, the ulVisibility of this capability is set to invalid and ulOperations of this capability is set to read-only and the current value is invalid.

3.115. FlexibleProgram

This will set the Flexible program value.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_FlexibleProgram |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | -5~+5EV(Default value: 0) |

The module set the step values same as Capability_EVInterval. When the Capability_EVInterval, Capability_ExposureMode is changed, the capability is set to default(0), and the module sends to the client kMAIDEvent_CapChange or kMAIDEvent_CapChangeValueOnly.

The following cases, this Capability is read only.

- The value of Capability_ExposureMode is except “Program”.
- When sequence error has occurred.
- The value of Capability_RetractableLensWarningStatus is “True”.
- During movie file recording.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.116. FocusPreferredArea

This will select the preferred focus area.

| | |
|--------------|---|
| Capability | kNkMAIDCapability_FocusPreferredArea |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDFocusPreferred2 0 – 51(default 1) |

When the value of this capability is 0, it is shown that the focus point is not decided.

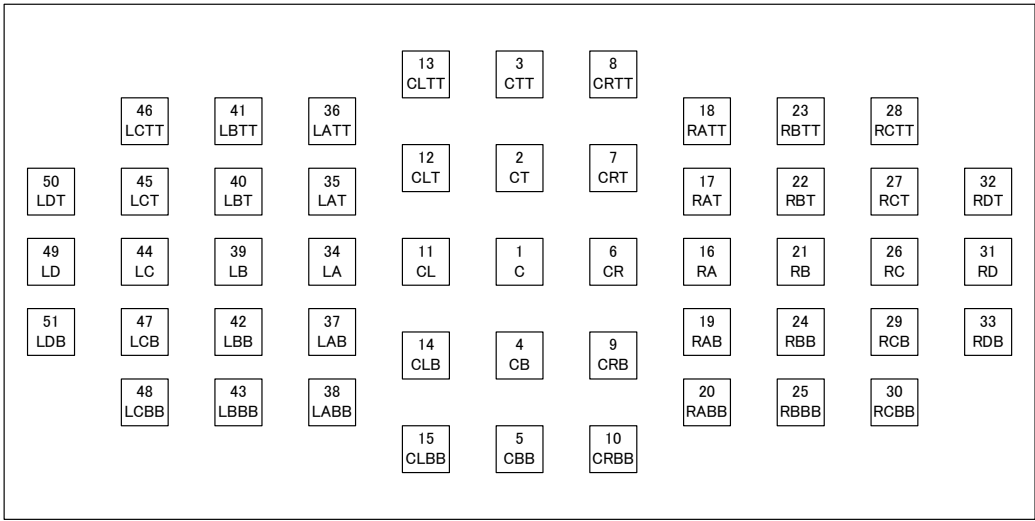
This capability will return kNkMAIDResult_ValueOutOfBounds, when 0 is set.

This capability is valid only when Capability_FocusAreaMode is “Single” or “Dynamic(9 points/21 points /51 points)” or “3D-tracking ” or Group-area AF.

The following cases, this Capability is read only.

- The value of Capability_LiveViewStatus is “ON”.
- The value of Capability_FocusAreaMode is “Auto-area AF”
- When the value of Capability_ MirrorUpStatus is 1(ON). (D810A only)

The relationship between focus point and the value of this capability, as shown in following figure.



The value of this capability range is limited by the setting of Capability_AFAreaPoint and Capability_FocusAreaMode.

When the value of Capability_FocusAreaMode is “Single-area AF”, “Dynamic-area AF (9/21/51points)”, or “3D-tracking”, the value of the following table becomes effective.

| AFAreaPoint | 0 (51points) | 1 (11points) |
|--------------------|--------------|---|
| FocusPreferredArea | 0 - 51 | 0, 1, 3, 5, 21, 23, 25, 31, 39, 41, 43, 49, |

When the value of Capability_FocusAreaMode is “Group-area AF”, the value of the following table becomes effective.

| AFAreaPoint | 0 (51points) | 1 (11points) |
|--------------------|---|--|
| FocusPreferredArea | 0, 1, 2, 4, 6, 7, 9, 11,12,14, 16, 17, 19, 21, 22, 24, 26, 27, 29, 34, 35, 37, 39, 40, 42, 44, 45, 47 | 0, 1, 2, 4, 21, 22, 24, 26, 39, 40, 42, 44 |

3.117. Aperture

This will set the aperture.

Capability kNkMAIDCapability_Aperture

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set

Data String of F value (e.g.) “1.4”, “1.6”, “1.8”...

When aperture is not set to minimum(FEE), this capability is read-only and the string of “FEE” is set. When this capability is “FEE”, the module can’t execute capture-command.

When CPU lens is not attached, this capability returns aperture of the Capability_F0Manual setting. If the Capability_F0Manual is set to “N/A”, returns “-”. The following cases, this Capability is read only.

- Lens is not set to minimum aperture (FEE status) -> (Return the string "FEE")
- CPU lens is not attached.
- Capability_ExposureMode is Program or Speed Priority.
- Capability_ApertureLockSetting set "1(ON)".
- Capability_RetractableLensWarningStatus is True.
- Capability_ApertureDial is false in the mounting of the lens with an aperture ring .
- Capability_SpotWBMode is 1 (ON) .
- When the value of Capability_ MirrorUpStatus is 1(ON). (D810 A only)

The following cases, this Capability is read only and this Visibility is Invalid.

- When sequence error has occurred.

3.118. MeteringMode

This will get the metering mode.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_MeteringMode |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set kNkMAIDCapOperation_GetDefault |
| Data | one of eNkMAIDMeteringMode <u>0: Matrix</u> 1: Center weighted 2: Spot 4: Highlight |

When Live view is executed, the change of this capability value is not applied, and the change is applied after Live view finished.

If the value of this capability is set to 0(Matrix) when CPU lens is not attached and non-CPU lens data is N/A, 1(Center weighted) will be applied for metering mode.

The following cases and if this Capability is set to “4: Highlight”, “1: Center weighted” will be applied for metering mode.

- When CPU lens is not attached.
- When AF lens, Ai-P lens or Field scoop lens (except G type or D type) is attached.

The following cases, this Capability is read only

- When AE locked.
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.119. ExposureMode

This will select the exposure mode.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_ExposureMode |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDExposureMode <u>0: Program mode</u> 1: Aperture priority 2: Speed priority 3: Manual |

When CPU lens is not attached, the array data includes only Aperture priority and Manual.

The following cases, this Capability is read only

- During the movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.120. ExposureComp

This will set the exposure compensation value.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_ExposureComp |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | -5~+5EV(Default value: 0) |

The module sets the step value same as Capability_ExpCompInterval.

When the Capability_ExpCompInterval is changed, the module sends to the client kMAIDEvent_CapChange.

Capability_MovieExposureComp is used for exposure compensation setting during movie live view.

The following cases, this Capability is read only

- When the value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.121. ShootingMode

This will set the shooting mode.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_ShootingMode |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDShootingMode |

| |
|------------------------------|
| 0: <u>Single(S)</u> |
| 1: Continuous low-speed(CL) |
| 2: Continuous high-speed(CH) |
| 3: Self-Timer |
| 8: Quiet |
| 10: Continuous Quiet |
| 4: Mirror up (D810A only) |

This capability can be set only when the Capability_LockCamera is true.

3.122. ContinuousShootingNum

This will set the number of shots in continuous shooting by host.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_ContinuousShootingNum |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set kNkMAIDCapOperation_GetDefault |
| Data | 1 – 200 (Default 1) |

The client can't set a value that is bigger than Capability_ShootingLimit.

If the client sets a value that is bigger than the value of Capability_ShootingLimit within the maximum value of this capability, the module does not return error but the value of this capability is set to the value same as Capability_ShootingLimit automatically.

However, when the value of Capability_ShootingLimit is changed smaller than this capability, this capability is not affected, and kept current value.

The maximum value of this capability is the same as the default value of CapabilityRemainContinuousShooting.

When the value of Capability_EnableBracketing is ON and execute bracketing on continuous mode, the client must set the value more than the bracketing number of shot to this capability. But if the client sets the value more than the bracketing number of shot, bracketing will be stop at the setting the bracketing number of shot on continuous mode.

The following cases, this Capability is read only

- When the value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.123. FocusAreaMode

This will select the AF area mode for phase detection on still image shooting.

Capability kNkMAIDCapability_FocusAreaMode

Object types Source

ulType kNkMAIDCapType_Enum

kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

| Menu | string | Capability_FocusMode | "Open F value" greater than 5.6 lens attached. |
|--------------------------|----------------------|----------------------|--|
| 9-points dynami-area AF | "Dynamic(9 points)" | AF-C | 9-points dynami-area AF |
| Single-point AF | "Single" | AF-S, AF-C | Single-point AF |
| <u>Auto-areaAF</u> | "Auto" | AF-S, AF-C | Single-point AF |
| 3D – tracking | "3D-tracking " | AF-C | Single-point AF |
| 21-points dynami-area AF | "Dynamic(21 points)" | AF-C | 21-points dynami-area AF |
| 51-points dynami-area AF | "Dynamic(51 points)" | AF-C | 51-points dynami-area AF |
| Group-area AF | "Group" | AF-S, AF-C | Group-area AF |

After the value of this capability is set to "3D-tracking" or "Dynamic (9/21/51 points)" and Capability_AFMode is set to AF-S, the value of this capability is set to "Single".

When the lens that maximum aperture greater than 5.6 attached, AF area mode may be changed.

The AF area-mode which are limited by Capability_AFAreaMode, are not enumerated. However, when the current value is limited, it contains in listing.

When AF area-mode which is limited by Capability_LimitedAFAreaMode is set, the module returns an error (kNkMAIDResult_NotSupported).

The following cases, this Capability is read only

- When CPULens is not attached.
- When the value of Capabilty_AFMode is "MF".
- When the value of Capabilty_LiveViewStatus is "1(ON)".
- When the value of Capability_ MirrorUpStatus is 1(ON). (D810A only)

3.124. EnableBracketing

This will set whether bracketing is active or not.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_EnableBracketing |
| Object types | Source |
| ulType | kNkMAIDCapType_Boolean |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | True: ON <u>False: OFF</u> |

The following cases, this Capability is set “False: OFF”.

- When the value of Capabilty_BracketingVary is except “White Balance” and “ADL bracketing”, the value of Capability_EVInterval is changed.
- When the value of Capabilty_BracketingVary is “Flash Only”, movie live view is started.
- When during movie live view, the value of Capability_BracketingVary is changed to “Flash Only”.

The following cases, this Capability is read only

- When the value of Capabilty_HDRMode is “ON”.
- When during movie live view and the value of Capability_BracketingVary is “Flash Only”
- The value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

The following cases, this Capability is read only & invalid.

- When the value of Capabilty_BracketingVary is “White Balance” and the value of Capabilty_CompressionLevel is “RAW”, ”RAW+JPEG(Basic)”, ”RAW+JPEG(Normal)”, or ”RAW+JPEG(Fine)”.

3.125. AEBracketingStep

This will set the exposure increment for AE, SB, AE/SB bracketing.

| | |
|--------------|---|
| Capability | kNkMAIDCapability_AEBracketingStep |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDAEBracketingStep <u>0: 1/3EV</u> 1: 1/2EV 2: 2/3EV 3: 1EV 7: 2EV 8: 3EV |

The array data is affected by the Capability_EVInterval setting as following table.

| EVInterval | AEBracketingStep |
|------------|-----------------------------|
| 1/3EV | 1/3EV、 2/3EV、 1EV、 2EV、 3EV |
| 1/2 EV | 1/2EV、 1EV、 2EV、 3EV |
| 1EV | 1EV、 2EV、 3EV |

When the value of Capability_EVInterval is changed, this capability is changed to 3(1EV).

The following cases, this Capability is read only

- When the value of Capabilty_EnableBraketing is “OFF”.
- When the value of Capabilty_BracketingVary is “White Balance” or “ADL blacketing”.
- When the value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.126. WBBracketingStep

This will set the white balance increment for WB bracketing.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_WBBracketingStep |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDWBBracketingStep <u>0: 1Step</u> 1: 2Step 2: 3Step |

The following cases, this Capability is read only

- When the value of Capabilty_EnableBraketing is “OFF”.
- When the value of Capabilty_BracketingVary is except “White Balance”.
- When the value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_ MirrorUpStatus is 1(ON). (D810A only)

3.127. BracketingType

This will select the combination bracketing shots and direction when AE, Flash, AE and Flash, White balance bracketing.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_BracketingType |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDBracketingType 0: Minus_2 1: Plus_2 2: Minus_3 3: Plus_3 <u>4: Both_3</u> 5: Both_5 6: Both_7 7: Both_9 |

When Capability_BracketingVary is “AE only” or “AE & flash” or “Flash only”, and Capability_AEBBracketingStep is set to 3EV or 2EV, "6: Both_7", "7: Both_9" are not enumerated.

The following cases, this Capability is read only

- When the value of Capability_EnableBraketing is “OFF”.
- When the value of Capabilty_BracketingVary is “ADL blacketing”.
- When the value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_ MirrorUpStatus is 1(ON). (D810A only)

3.128. ADLBracketingType

This will select the bracketing shots when ADL bracketing.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_ADLBracketingType |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, |
| Data | one of eNkMAIDADLBracketingType <u>0 : 2 shots(Off – UserSetting)</u> 1 : 3 shots(Off – Low – Normal) 2 : 4 shots(Off – Low – Normal – High – Extra High) 3 : 5 shots(Low – Normal – High – Extra High1– Extra High2) ※User settings use the setting of Capability_ADLBracketingStep. |

The following cases, this Capability is read only.

- When the value of Capability_EnableBraketing is “OFF”.
- When the value of Capability_BracketingVary is “ADL bracketing”.
- When the value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.129. ADLBracketingStep

This will set ADL bracketing level when two shots ADL bracketing is selected.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_ADLBracketingStep |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | one of eNkMAIDADLBracketingStep <u>0: Auto</u> 1: Low 2: Normal 3: High 4: Extra high1 |

The following cases, this Capability is read only.

- When the value of Capability_EnableBraketing is “OFF”.
- When the value of Capability_BracketingVary is “ADL bracketing”.
- When the value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.130. LiveViewStatus

This will start or stop Live view and show status of Live view.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_LiveViewStatus |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | one of eNkMAIDLiveViewStatus <u>0: OFF</u> 1: ON |

When the client start Live view, the client must set the value of this capability to 1(ON). And when the client stop Live view, the client must set the value of this capability to 0(OFF).

In case of kNkMAIDCapOperation_Get, the value of this capability will show the current status of Live view.

If the client want to get Live view image by Capability_GetLiveViewImage, the client have to set the value of this capability to 1(ON) beforehand.

The client have to check this value before closing Source object, and if the value of this capability is 1(ON), have to set to 0(OFF).

When the Live view is started, the status of camera will be changed to Lock camera internally, but the value of Capability_LockCamera kept the current value.

The execution of Capability_AFCapture, Capability_PreCapture, Capability_CaptureDustImage, and Capability_LockCamera is prohibited while Live view is executing.

The client has to check the value of Capability_LiveViewProhibit, and when the value of Capability_LiveViewProhibit is not 0, Live view will not be started.

If the LiveView can not be stopped by the camera factor, kNkMAIDResult_DeviceBusy is returned.

When the value of Capability_MirrorUpStatus is 1(ON) (D810A only), if this capability is set to 0 (OFF), kNkMAIDResult_ValueOutOfBounds is returned.

3.131. LiveViewProhibit

This will show the status of Live view prohibition.

Capability kNkMAIDCapability_LiveViewProhibit

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get

Data one of eNkMAIDLIVEViewProhibit

The live view prohibition is shown by the OR value of the following definition value. When 0 returns, the status is not Live view prohibition.

| value | Forbidden condition |
|------------|---|
| 0x01000000 | When Retractable lens is set, the zoom ring does not extend. |
| 0x00400000 | Release mode is mirror up and mirror is raised. |
| 0x00200000 | the value of kNkMAIDCapability_ShutterSpeed is Time. |
| 0x00020000 | High temperature and can not start live view. |
| 0x00008000 | Capture command is executing. The while until shooting. |
| 0x00004000 | Recording media is “Card” or “Card + SDRAM” and when no memory card is inserted in the camera, Release locked setting |
| 0x00000200 | TTL error |
| 0x00000100 | battery shortage |
| 0x00000020 | Aperture ring is not minimum. |
| 0x00000004 | Sequence error |

When the value of this capability is not 0, it shows the status of Live view prohibition.

3.132. LiveViewImageZoomRate

This will set the zoom rate for Live View image.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_LiveViewImageZoomRate |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDLiveViewImageZoomRate <u>0: Whole display</u> 7: 13% 1: 25% 3: 50% 5: 100% 6: 200% |

When the value of Capability_LiveViewSelector is changed, the value of this Capability is automatically set to “0: Whole display”.

This capability is a valid function only during Live View. The following cases, this Capability is read only and the visibility is invalid.

- When the value of Capability_LiveViewStatus is not a 1 (ON)
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

The following case, “6: 200%” can not be set and is not enumerated.

- When the value of Capability_SpotWBMode is 1(ON).

The following cases, this Capability is read only.

- During movie file recording.
- When the value of Capability_LiveViewStatus is “OFF”.

The following case, “7: 13%” can not be set and is not enumerated.

- Capability_CCDDDataMode is ”4: DXformat”
- Capability_AutoDXCrop is True and DX lens attached

3.133. CameraInclination

This will get inclination of camera.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_CameraInclination |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault |
| Data | one of eNkMAIDCameraInclination <u>0: Level (included when the inclination cannot be detected)</u> 1: Grip is top 2: Grip is bottom 3: Level (Up Down) |

When the Capability_CameraInclinationMode is false, or the camera cannot detect inclination of itself, the value of this capability is 0(Level).

3.134. RemainContinuousShooting

This will get the number of shot that can be recorded on SDRAM or the card in the continuous shooting mode by the command.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_RemainContinuousShooting |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault |
| Data | 0 – 100 (Default: 100) |

The value of this capability is always under the value of Capability_ShootingLimit. The value of this capability will be changed by the following setting.

- Capability_CompressionLevel
- Capability_ImageSize
- Capability_JpegCompressionPolicy
- Capability_CompressRAWEx
- Capability_CompressRAWBitMode
- Capability_NoiseReduction
- Capability_NoiseReductionHighISO
- Capability_ShootingLimit
- Capability_CCDDataMode
- Capability_HDRMode

If the current value is changed because of the above capability setting, the module sends to the client kMAIDEvent_CapChangeValueOnly.

3.135. RemainCountInMedia

This will get the number of shot that can be saved in Card in current image quality.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_RemainCountInMedia |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault |
| Data | 0 - 65535 (Default:0) |

When a card is not inserted, the value of this capability is 0.

The value of this capability is changed by the setting of camera.

When Capability_Slot2ImageSaveMode is "0: Overflow", this capability returns the total number of CF card slot and XQD card slot. If the total number is over 65535, the upper limit is 65535.

3.136. LockExposure

This will get lock status of auto exposure.

| | |
|---------------------|--------------------------------|
| Capability | kNkMAIDCapability_LockExposure |
| Object types | Source |
| ulType | kNkMAIDCapType_Boolean |
| ulOperations | kNkMAIDCapOperation_Get |
| Data | True: Lock False: Unlock |

3.137. LockFocus

This will get lock status of auto focus.

| | |
|---------------------|-------------------------------|
| Capability | kNkMAIDCapability_LockFocus |
| Object types | Source |
| ulType | kNkMAIDCapType_Boolean |
| ulOperations | kNkMAIDCapOperation_Get |
| Data | True: Lock False: Unlock |

3.138. LockFV

This will get the status of FV lock.

| | |
|---------------------|-------------------------------|
| Capability | kNkMAIDCapability_LockFV |
| Object types | Source |
| ulType | kNkMAIDCapType_Boolean |
| ulOperations | kNkMAIDCapOperation_Get |
| Data | True: Lock False: Unlock |

3.139. ExposureStatus

This will get the exposure indicator status of Camera.

| | |
|---------------------|-------------------------------------|
| Capability | kNkMAIDCapability_ExposureStatus |
| Object types | Source |
| ulType | kNkMAIDCapType_Float |
| ulOperations | kNkMAIDCapOperation_Get |
| Data | ExposureValue (EV) step = 1/12 (EV) |

3.140. InfoDisplayErrStatus

This will show error display status on the information panel.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_InfoDisplayErrStatus |
| Object types | Source |
| ulType | kNkMAIDCapType_Boolean |
| ulOperations | kNkMAIDCapOperation_Get |
| Data | True: ON(Error display) False: OFF |

3.141. FocallLength

This will get the focal length of the lens.

| | |
|---------------------|--------------------------------|
| Capability | kNkMAIDCapability_FocallLength |
| Object types | Source |
| ulType | kNkMAIDCapType_Float |
| ulOperations | kNkMAIDCapOperation_Get |
| Data | lfValue (mm) |

When a CPU lens is not attached, the value of this capability is set to zero.

3.142. FocusMode

This will get the focus mode.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_FocusMode |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get |
| Data | one of eNkMAIDFocusMode 0: MF 1: AF-S 2: AF-C 4: AF-F |

When the lens is not attached, the value of this capability is always MF.

3.143. BracketingCount

This will get the number of shots on AE bracketing or ADL bracketing.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_BracketingCount |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get |
| Data | [AE Bracketing] 1– 9 [ADL Bracketing] 1 – 5 |

When the Capability_EnableBracketing is true and the Capability_BracketingVary is “AE Only” or ” Flash Only” or ” AE & Flash” or “ADL bracketing”, this capability is valid. If this capability is invalid, returns zero.

When one or more image taken a photograph and the camera is changed as follows, bracketing count will be reset and the value of this capability is set to 1.

- Live view is strated or stopped
- When the value of Capability_LiveViewSelector is changed.

3.144. InternalFlashStatus

Represent the status of the built-in Speedlight.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_InternalFlashStatus |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get |
| Data | one of eNkMAIDInternalFlashStatus 0: Ready 1:Not Ready 2: Close |

In the case of movie live view, the value of this Capability is: is "1 Not Ready".

3.145. InternalFlashComp

Represent the flash exposure compensation amount of built-in Speedlight.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_InternalFlashComp |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | -3~+1 (Default:0) |

Refer to the setting of Capability_ExpCompInterval, Module sets the step size is the same as the value.

The following cases, this Capability can not set.

- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the Capability_InternalFlashStatus is “Close” and Capability_ExternalFlashStatus is “Not Exist”
- When Capability_HDRMode is 1: On(single photo) or 2: On(series).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.146. ExternalFlashStatus

This will shows the status of External flash.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_ExternalFlashStatus |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get |
| Data | one of eNkMAIDExternalFlashStatus 0: Ready 1: Not Ready 2: Not Exist |

3.147. ExternalFlashComp

This will set the flash compensation of the external speedlight.

| | |
|---------------------|-------------------------------------|
| Capability | kNkMAIDCapability_ExternalFlashComp |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get |
| Data | -3~+3EV (1/6EV step) |

This capability is valid when Capability_ExternalNewTypeFlashMode is either iTTL-BL(1), iTTL(2), AA(3) or GN(5).

3.148. ExternalFlashSort

This will get the sort of external speedlight.

Capability kNkMAIDCapability_ExternalFlashSort

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get

Data

| |
|--|
| 0: non- communication. |
| 2: new communication (with setting display) |
| 4: new communication (without setting display:SB-400). |
| 3: Not exist. |

The camera cannot detect “1: old communication.”, so this capability returns always “0: noncommunication.”when an old communication speedlight is attached.

The relationship of external speedlight type and the speedlight made by Nikon is shown in the following table.

| New communication (with setting display) | New communication (without setting display) | Old communication | Non- communication | Not detected |
|--|---|---|--|--|
| SB-910 SB-900、 SB-800、 SB-700、 SB-600、 SU-800 | SB-400 SB-300 | SB-80DX、 SB-50DX、 SB-28DX、 SB-28D、 SB-28、 SB-27、 SB-26、 SB-25、 SB-24、 | SB-30、 SB-29、 SB-29S、 SB-23、 SB-22、 SB-22S、 SB-21A、 SB-21B、 SB-20、 SB-19、 SB-18、 SB-17、 SB-16A、 SB-16B、 SB-15、 SB-14、 SB-12、 SB-11、 SB-10、 SB-E | SB-9、 SB-8、 SB-7、 SB-6、 SB-5、 SB-4、 SB-3、 SB-2、 SB-1 |

3.149. ExternalNewTypeFlashMode

This will get flash mode when the Capability_ExternalFlashSort is 2 (new communication (with setting display)) or 4 (new communication (without setting display))

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_ExternalNewTypeFlashMode |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, |
| Data | one of eNkMAIDExternalNewTypeFlashMode 0: OFF 1: iTTL-BL 2: iTTL 3: AA(Auto aperture) 4: A(Non-TTL auto) 5: GN(Range-priority manual) 6: M(manual) 7: Repeating flash 8: The external speed light, new communication does not exist. |

3.150. LensInfo

This will get the focal length and minimum F number.

| | |
|---------------------|----------------------------|
| Capability | kNkMAIDCapability_LensInfo |
| Object types | Source |
| ulType | kNkMAIDCapType_String |
| ulOperations | kNkMAIDCapOperation_Get |
| Data | (e.g.)"35-70/F3.3-4.5D" |

3.151. AFCapture

This will take a picture after auto focus and save an image to specified media.

Capability kNkMAIDCapability_AFCapture

Object types Source

ulType kNkMAIDCapType_Process

ulOperations kNkMAIDCapOperation_Start

This will take a picture after auto focus. If the Capability_FocusMode is MF (0) or lens is not attached, the camera does shooting immediately without auto focus.

When auto focus failed, whether taking a picture or returning out of focus error, that is depended on the setting of Capability_FocusMode, Capability_AFsPriolity, and Capability_AFcPriolity.

When Capability_ShootingMode is CL or CH or Continuous Quiet, Numbers of photo in which a seriography is possible is the smallest number in Capability_ContinuousShootingNum, Capability_RemainContinuousShooting, or the remaining numbers of bracketing shot.

However, the number of what can be photoed is one even if Capability_ShootingMode is CL or CH when Capability_MovieReleaseButton is “Live frame grab”, or Capability_HDRMode is other than “Off”.

When the module prepared to get a main image, the module issues kNkMAIDEvent_Add to source object.

The media saved an image is specified by Capability_SaveMedia. When there is not free space in specified media, this capability returns kMAIDResult_MediaFull.

This capability returns kNkMAIDResult_NoMedia when card is under being formatted or no card is inserted.

If mirror up is started by camera already, kNkMAIDResult_MirrorUpCapture_Already_Start is returned.

This capability is returned kMAIDResult_ValueOutOfBounds when the mirror up first release is completed. (D810A only)

The following cases, the ulVisibility of this capability is invalid and the ulOperations is set to invalid.

- When the value of Capabilty_ShutterSpeed is “Time”.
- When the value of Capabilty_RetractableLensWarningStatus is “True”.
- When the value of Capabilty_LiveViewStatus is “1(ON)”.
- When the value of Capabilty_ShootingMode is “Mirror up”. (D810 only)

3.152. ContrastAF

This will control contrast AF during live view.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_ContrastAF |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set one of eNkMAIDContrastAF 0x00: start AF (effective only as the Set value) 0x01: stop AF (effective only as the Set value) 0x10: AF finishes in focus (effective only as the Get value) 0x11: AF finishes out of focus (effective only as the Get value) 0x12: It is operating AF (effective only as the Get value) |

Contrast AF will start when the client set 0x00 (start AF). And the module will return the response without wait for AF finish.

The client can confirm whether contrast AF finish correctly by getting value(0x10, 0x11, 0x12) of this capability, or referring “focus drive state” of “display information” in Live view image. (Please refer NkMAIDCapability_GetLiveViewImage)

When the client wants to stop contrast AF, the client will set 0x01 (stop AF). After contrast AF finish, the module returns response.

The following cases, the ulVisibility of this capability is invalid and the ulOperations is set to invalid.

- When the value of Capabilty_FpcusMode is “MF”.
- When CPULens is not attached.
- When the value of Capabilty_LiveViewStatus is “OFF”.
- When the value of Capabilty_RetractableLensWarningStatus “True”.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.153. PreCapture

This will take a picture for presetting white balance.

Capability kNkMAIDCapability_PreCapture

Object types Source

ulType kNkMAIDCapType_Process

ulOperations kNkMAIDCapOperation_Start

Data None

If mirror up is started by camera already, kNkMAIDResult_MirrorUpCapture_Already_Start is returned.

The following cases, the ulVisibility of this capability is invalid and the ulOperations is set to invalid.

- When the value of Capability_LiveViewStatus is “1(ON)”.
- When the value of Capability_ShutterSpeed is “Time”.
- When the value of Capability_LiveViewSelector is “1: movie live view” and the value of Capability_ReleaseButton is “1: Record movies”.
- When the value of Capability_RetractableLensWarningStatus is "True".
- When the value of Capability_HDRMode is not 0(OFF). (D810A only)

3.154. MFDriveStep

This will set the driving step of lens for adjusting focus position during live view.

Capability kNkMAIDCapability_MFDriveStep

Object types Source

ulType kNkMAIDCapType_Range

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

Data driving step (Number of pulses) 1 to 32767

This capability will save the driving step internally, does not send request for adjusting focus position to camera. Capability_MFDrive will send request for adjusting focus position to camera with this capability value actually.

- When the value of Capability_FocusMode is “MF”.
- When CPUlens is not attached.
- When the value of Capability_LiveViewStatus is “OFF”.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.155. MFDrive

This will adjust focus position during live view.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_MFDrive |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDMFDrive 0: infinity -> close 1: close -> infinity |

This will send request to adjust focus position with the setting of this capability and the step of Capability_MFDriveStep. The module will return response as soon as the camera starts adjusting manual focus position, the module doesn't wait to finish manual focus driving. If manual focus driving reaches the end of focus area, the module will return kNkMAIDResult_MFDriveEnd.

After this capability is executed correctly, the client can confirm whether manual focus driving finish correctly by getting value of this capability, or referring "focus drive state" of "Display information" in Live view image.

The following cases, the ulVisibility of this capability is invalid and the ulOperations is set to invalid.

- When the value of Capability_FocusMode is "MF" or "AF~F"
- When CPUlens is not attached.
- When the value of Capability_LiveViewStatus is "OFF".
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.156. ContrastAFArea

This will change focus point of contrast AF during live view.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_ContrastAFArea |
| Object types | Source |
| ulType | kNkMAIDCapType_Point |
| ulOperations | kNkMAIDCapOperation_Set |
| Data | struct NkMAIDPoint { SLONG x; -----Coordinates of X axis SLONG y; -----Coordinates of Y axis } |

This capability set the focus point by using x and y of NkMAIDPoint structure.

The value range of x and y is defined by “total size” of “Display information” in Live view image.

(please refer NkMAIDCapability_GetLiveViewImage)

But the range that can be actually set becomes an area where "size of the AF frame" length and breadth size half was subtracted from the length and breadth size of "total size" respectively. When the value that exceeds the range that can be set to x and y is set, the maximum or minimum value will be used as this value.

Even though Capability_FocusMode is 0(MF), or CPU lens is not attached, this capability can be set.

The following cases, the ulOperations is set to invalid.

- When the value of Capabilty_LiveViewStatus is “OFF”.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.157. CaptureDustImage

This will take a dust off ref photo and saved to specified media.

Capability kNkMAIDCapability_CaptureDustImage

Object types Source

ulType kNkMAIDCapType_Process

ulOperations kNkMAIDCapOperation_Start

The format type of dust off ref photo is kNkMAIDFileType_NDF.

When the client deletes a dust off ref photo by Capability_DeleteDramImage, the client must use Item ID notified by data parameter of kNkMAIDEvent_AddChild as Capability_CurrentItemID. The media saved an image is specified by Capability_SaveMedia. When there is not free space in specified media, this capability returns kMAIDResult_MediaFull.

This capability returns kNkMAIDResult_NoMedia when card is under being formatted or no card is inserted. If mirror up is started by camera already, kNkMAIDResult_MirrorUpCapture_Already_Start is returned.

The following cases, the ulVisibility of this capability is invalid and the ulOperations is set to invalid.

- When CPULens is not attached.
- When the value of Capability_ShootingMode is "Mirror up".
- When the capability_LiveViewStatus is 1 (ON).
- When the value of Capability_ShutterSpeed is "Time".
- When the value of Capability_LiveViewSelector is "1: movie live view" and the value of Capability_ReleaseButton is "1: Record movies".
- Capability_RetractableLensWarningStatus is "True".
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)
- When the value of Capability_HDRMode is not 0(Off). (D810A only)

3.158. DeleteDramImage

This will delete DRAM image specified by Capability_CurrentItemID.

Capability kNkMAIDCapability_DeleteDramImage

Object types Source

ulType kNkMAIDCapType_Process

ulOperations kNkMAIDCapOperation_Start

The DRAM image to be deleted is specified by Capability_CurrentItemID.

This capability execution timing is limited to the following case.

- After issuing kNkMAIDCapability_Acquire for Image Object, and before issuing kNkMAIDCommand_Close

The client will issue Capability_Acquire for Image object and cancel Capability_Acquire by kNkMAIDCommand_Abort, and set Capability_CurrentItemID and execute this capability, so, the deletion will be completed.

In case of deletion of RAW+JPEG, if the client executes this capability for JPEG, the both of RAW and Jpeg files will be deleted at the same time.

When the client deletes DRAM image after receiving kNkMAIDEvent_AddChild, the client must close Item object. The module does not close Item object.

This capability is not supported when an image is saved on Crad.

To Delete SDRAM image by this capability is prohibited, when it is applied for either of condition below. In this case, this capability returns kNkMAIDResult_NotSupported.

- The value of Capability_SaveMedia is “2: Card + SDRAM”.
- During movie file recording.

The following cases, this Capability is read only.

- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.159. RawJpegImageStatus

This will get whether the image is taken on RAW+JPEG mode.

Capability kNkMAIDCapability_RawJpegImageStatus

Object types Image

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get

Data one of eNkMAIDRawJpegImageStatus
0: Single 1: Raw+JPEG

3.160. CurrentItemID

This will specify the SDRAM image operated now.

Capability kNkMAIDCapability_CurrentItemID
Object types Source
ulType kNkMAIDCapType_Unsigned
ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

Item ID is used as an identifier that specifies the image data in SDRAM.

Item ID is notified by data parameter of kNkMAIDEvent_AddChild.

The value of this capability is referred by Capability_DeleteDramImage.

3.161. GetLiveViewImage

This will get Live view image.

Capability kNkMAIDCapability_GetLiveViewImage
Object types Source
ulType kNkMAIDCapType_Array
kNkMAIDArrayType_Unsigned
ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray

The client will get the size of Live view image by kNkMAIDCapOperation_Get, and get a actual Live view data by kNkMAIDCapOperation_GetArray.

Every time, the size of Live view image need not be confirmed with kNkMAIDCapOperation_Get in this capability before execution of kNkMAIDCapOperation_GetArray because the specification of Live view image is always fixation. When the client wants to get Live view image with kNkMAIDCapOperation_GetArray, the client must allocate the buffer for the maximum size, and set buffer to kNkMAIDArray.pData, and set allocate size to kNkMAIDArray.ulElements.

After reading Item image, kNkMAIDArray.ulElements will be updated with the actual size of Live view image, the Live view image will be set to kNkMAIDArray.pData.

When Capability_LiveViewStatus is 0(OFF), the ulOperations of this capability is set to read-only, kNkMAIDCapOperation_GetArray is invalid.

If Live view is stopped by camera automatically (including when the live view time limit passes), the module returns kNkMAIDResult_NotLiveView.

Live view image is consisted of “Display information” and “Live view image(JPEG).”

The pixel size of Live view image is different in each Live view data, each detailed information is set to “Display information” area.

Specification of Live view image

| image quality | maximum file size |
|---------------|--|
| Jpeg Basic | 8byte / Size information header + 376byte / Display information + 49,920Byte/Max Live view image |

The format of the Live view image is shown below.

| | | | | |
|---------------------|--|-----------------------------|---------------------|---|
| Display information | Display information image size | | 4Byte | |
| | Live view image size | | 4Byte | |
| | Attached JPEG image size | Horizontal size | 2Byte | Size that is set in LiveViewImageSize property is the JPEG image size |
| | | Vertical size | 2Byte | |
| | Whole size | Horizontal size | 2Byte | Standard of the coordinates |
| | | Vertical size | 2Byte | |
| | Display area size | Horizontal size | 2Byte | The whole size is equal to the display area size when the image is not enlarged. |
| | | Vertical size | 2Byte | |
| | Display center coordinates | Horizontal size | 2Byte | |
| | | Vertical size | 2Byte | |
| | AF frame size (*1) | Horizontal size | 2Byte | |
| | | Vertical size | 2Byte | |
| | AF frame center coordinates (*1) | Horizontal size | 2Byte | |
| | | Vertical size | 2Byte | |
| | Reserve | | 4Byte | |
| | Selected focus area | | 1Byte | 0 ~ 51 |
| | Rotation direction | | 1Byte | 0: No rotation 1: Rotate counterclockwise 2: Rotate clockwise 3: UpSideDown |
| | Focus driving status | | 1Byte | 0: Not driving, 1: Driving |
| | Reserve | | 1Byte | |
| | Reserve | | 4Byte | |
| | Reserve | | 2Byte | |
| | Countdown time | | 2Byte | Countdown every one second starting from 3600 (one hour) ; countdown starting from thirty seconds with a rise in temperature |
| | Focusing judgment result | | 1Byte | 0: No information,1: Not focused,2: Focused |
| | AF driving enabled status | | 1Byte | 0: AF driving disabled, 1: AF driving enable |
| | Reserve | | 2Byte | |
| | Virtual horizon information (*2) | Rolling | 4Byte | |
| | | Pitching | 4Byte | |
| | | Yawing | 4Byte | |
| | Remaining time of movie recording | | 4Byte | From 0 to 1200000 [msec] * It is valid during the movie recording state. |
| | Movie recording information | | 1Byte | 0: During LV execution 1: During movie recording |
| | AF mode status of the face detection system | | 1Byte | 0: The face detection system is not set to AF. 1: The face detection system is set to AF. |
| | The number of persons whose faces are detected by the system | | 1Byte | From 0 to 35 (Thirty-five is the maximum number of persons) |
| | AF area index | | 1Byte | From 0 to 34 (fixed to 0) |
| | 0 to 34 | AF frame size | Horizontal size | Area of the AF frame size and the AF frame center coordinates for thirty-five persons (4 Byte + 4 Byte) x 35 persons; 280 Byte in total |
| | | | Vertical size | |
| | | AF frame center coordinates | Horizontal position | |
| | | | Vertical position | |
| | Sound level (peak) | L | 1Byte | 0 - 14 |
| | | R | 1Byte | 0 - 14 |
| | Sound level (current value) | L | 1Byte | 0 - 14 |
| | | R | 1Byte | 0 - 14 |
| | Reserve | | 1Byte | |
| | White balance at live view photography | | 1Byte | 0 : Not used 1: Used |
| | Reserve | | 1Byte | |
| | State of SpotWB | | 1Byte | 0: OFF 1: Waiting(Unacquired) 2: In acquisition operation 3: Waiting(Acquisition success) 4: Waiting(Acquisition failure) |
| | Reserve | | 24Byte | |

| | | | |
|-----------------|------------|---|--|
| | | e | |
| Live view image | Image data | | |

*2 For more information on Virtual horizon information, see Capability_AngleLevel, Capability_AngleLevelPitch, Capability_AngleLevelYaw.

Described below, “AF mode status of the face detection system” is “1: The face detection system is set to AF”.

| No | Content |
|----|--|
| 1 | Even if "The number of persons whose faces are detected by the system" is 0, "AF mode status of the face detection system" set to "1: The face detection system is set to AF". |
| 2 | From the point at which the camera is focused, a value other than "0: No information" is set for 1 second, to "Focusing judgment result". |
| 3 | The values of the area in the table are marked “*1”is not secured, because "AF frame center coordinates" and "AF frame size" for "the face detection system" will be used. But, when "The number of persons whose faces are detected by the system" is 0, AF is fixed to the center AF wide, and the values of the area in the table are marked “*1”is secured. |

3.162. GetVideoImage

This will get Movie image.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_GetVideoImage |
| Object types | Video |
| ulType | kNkMAIDCapType_Generic |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray |
| Data | pointer to NkMAIDGetVideoImage structure typedef struct tagNkMAIDGetVideoImage { ULONG ulType;-----one of eNkMAIDArrayType ULONG ulOffset;-----Not used ULONG ulReadSize;-----Size of acquired data ULONG ulDataSize;-----Size of buffer set to “pData” LPVOID pData;-----Pointer to buffer } NkMAIDGetVideoImage, FAR* LPNkMAIDGetVideoImage; |

The client will get the size of Movie image by kNkMAIDCapOperation_Get, and get an actual Movie data by kNkMAIDCapOperation_GetArray.

[In case of Get]

The unacquired data of Movie image is set to NkMAIDGetVideoImage.ulDataSize.

[In case of GetArray]

When the client want to get Movie image with kNkMAIDCapOperation_GetArray, the client must allocate the buffer for size to be acquired, and set buffer to NkMAIDGetVideoImage.pData, and set allocate size to NkMAIDGetVideoImage.ulReadSize.

After reading, the size of data actually read will be set to NkMAIDGetVideoImage.ulReadSize and the Movie image will be set to NkMAIDGetVideoImage.pData.

If the size more than unacquired data of Movie image is set to NkMAIDGetVideoImage.ulDataSize, module will read only the actual unacquired data size. It is necessary to set “kNkMAIDArrayType_Unsigned” to NkMAIDGetVideoImage.ulType.

Please set 0 to NkMAIDGetVideoImage.ulDataSize when the client want to stop the acquisition of Movie image on the way.

When the value of Capability_MirrorUpStatus is 1(ON), this capability returns kNkMAIDResult_ValueOutOfBounds. (D810A only)

3.163. LockCamera

This will lock camera. When the camera is locked, user can't operate it directly.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_LockCamera |
| Object types | Source |
| ulType | kNkMAIDCapType_Boolean |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set kNkMAIDCapOperation_GetDefault |
| Data | True: Lock <u>False: Unlock</u> |

When during take a picture or AF, it may be false to set.

When Capability_LiveViewStatus is 1(ON), the ulOperations of this capability is set to read-only.

3.164. CameraType

This will get the camera type.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_CameraType |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get |
| Data | one of eNkMAIDCameraType 0x3A: D810 0x3E: D810A |

3.165. LensType

This will get the lens type about CPU lens.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_LensType |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get |
| Data | one of eNkMAIDLensType 0x00000001: D type 0x00000010: G type 0x00000100: VR 0x00001000: DX 0x00100000: Auto distortion control 0x01000000: Retractable lens 0x00000020: E-type lens |

The value of this capability is expressed by the OR value.

When CPU lens is not attached, the module returns 0.

3.166. AFMode

This will set the focus mode for phase detection on still image shooting.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_AFMode |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDAFMode <u>0: AF-S</u> 1: AF-C 3: MF fixed 4: MF selected |

This capability is affected by the setting of Capability_FocusMode on still image shooting and, Capability_LensType, Capability_LockCamera.

| The setting of AF mode switch Setting state of CPU lens | LockCamera | LockCamera | AFMode which can be set up |
|--|------------|----------------|----------------------------|
| MF or CPU lens is not attached | | | MF fixed |
| AF (CPU lens is attached) | ON | No restriction | AF-S, AF-C, MF(select) |
| | | AF-S | AF-C, MF(select) |
| | | AF-C | AF-S, MF(select) |
| | OFF | No restriction | AF-S, AF-C, |
| | | AF-S | AF-C |
| | | AF-C | AF-S |

When the value of this capability is 0(AF-S), it is impossible to set the value of Capability_FocusAreaMode to “3D-tracking” and “Dynamic”(9/21/39 points).

When the value of Capability_FocusAreaMode is “3D-tracking” or “Dynamic”, if the value of this capability is set to 0(AF-S), the value of Capability_FocusAreaMode is changed into “Single” automatically.

The following cases, this Capability is read only.

- When the value of Capabilty_AFMode is “MF”.
- When the value of Capabilty_LiveViewStatus is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.167. AFModeAtLiveView

This will set the focus mode of the live view or the movie recording.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_AFModeAtLiveView |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDAFModeAtLiveView <u>0: AF·S</u> 2: AF·F 3: MF fixed (effective only as the Get value) 4: MF selected |

4(MF selected) can be set when Capability_LockCamera is true.

The following cases, the ulOperations of this capability is set to read-only.

- When the Capability_FocusMode is 0(MF).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.168. LiveViewAF

This will set the focus point of the live view or the movie recording.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_LiveViewAF |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDLiveViewAF 0: Face priority <u>1: Wide area</u> 2: Normal area 3: Subject tracking |

It is possible to change the value of this capability during live view.

When [3 : Subject tracking] is set during live view,

kNkMAIDResult_ValueOutOfBounds is returned. And, when a live view is started when [3 : Subject tracking] is set, the value of this capability is automatically changed to [1 : Wide area].

The following cases, this tapability is read only.

- When the value of Capability_SpotWBMode is “1(ON)”.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.169. MovRecInCardStatus

This will start or stop movie recording and show status of movie recording.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_MovRecInCardStatus |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | one of eNkMAIDMovRecInCardStatus <u>0: OFF</u> 1: ON |

When the client starts movie recording in the card, the client must set the value of this capability to 1(ON). And when the client stops movie recording in the card, the client must set the value of this capability to 0(OFF).

In case of kNkMAIDCapOperation_Get, the value of this capability will show the current status of movie recording.

This capability is accepted only during movie live view.

It is recommended to check the value of Capability_MovRecInCardProhibit before issuing this capability before starting movie recording. If the Capability_MovRecInCardProhibit is a value other than 0, the client can not start movie recording.

When the Capability_LiveViewStatus is set to 0(OFF), movie recording is automatically stopped by the camera. Taking a picture of the still picture is prohibited while movie recording.

The following cases, the ulOperations of this capability cannot be performed.

- When the value of Capability_LiveViewStatus is "OFF".
- When the value of Capability_LiveViewSelector is "0: live view photography".
- When the value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.170. MovRecInCardProhibit

This will show the status of movie recording prohibition.

Capability kNkMAIDCapability_MovRecInCardProhibit

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get

Data one of eNkMAIDMovRecInCardProhibit

The movie recording prohibition is shown by the OR value of the following definition value. When 0 returns, the status is not movie recording prohibition.

| Value | Prohibition condition |
|------------|---|
| 0x00002000 | Capability_LiveViewSelector is 0(live view photography) |
| 0x00001000 | During enlarged display of Live view |
| 0x00000800 | Card protection |
| 0x00000400 | During movie file recording |
| 0x00000200 | There is movie data in the buffer. |
| 0x00000008 | No free area in the card |
| 0x00000004 | Card not formatted |
| 0x00000002 | Card error |
| 0x00000001 | No card inserted |

This Capability becomes effective only during live view.

When the Capability_LiveViewStatus is 0(OFF), the ulVisibility of this capability is invalid and the current value is invalid.

3.171. AngleLevel

This will show the virtual horizon angle information.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_AngleLevel |
| Object types | Source |
| ulType | kNkMAIDCapType_float |
| ulOperations | kNkMAIDCapOperation_Get |
| Data | normal : 0.0°- 359. 9999847412109375° When angle information cannot be acquired : -1 |

The angle becomes 0.0 degree when the camera is horizontal, and increases when the camera is turned to an anti-clock surroundings in view of the photographer.

The range of the angle is from 0.0 degree to 359.9999847412109375 degrees.

It becomes 0.0 degree or more if it turns anti-clockwise from the state of 359.9999847412109375 degrees.

It becomes 359.9999847412109375 degrees or less if it turns clockwise from the state of 0.0 degree.

The event is not issued even if there is a change in angle information on the camera.

The module returns -1 when angle information cannot be acquired or there is no reliability in the angle.

When the numerical value that adds 0.5 to the real number value and cuts down the fraction part is a multiple of 0 or 90, it is judged it is the horizontal and vertical.

3.172. AngleLevelPitch

This will show the pitch of virtual horizon angle information.

Capability kNkMAIDCapability_AngleLevelPitch

Object types Source

ulType kNkMAIDCapType_float

ulOperations kNkMAIDCapOperation_Get

Data Normal:0.0° or 180.0°±60°

When angle information cannot be acquired : -1

When the camera position is level, the value of this capability is 0 or 180 and the range of angle is from 0.0°, 180.0° to ±60°.

| Camera position | Direction of a lens | Ragne of angle | level |
|-----------------|---------------------|-----------------------------------|-------|
| Normal | tilted forward | 0.0 ~ 60.0 | 0 |
| | tilted back | 0.0, 359.9999847412109375 ~ 300.0 | |
| Upside-down | tilted forward | 180.0 ~ 120.0 | 180 |
| | tilted back | 180.0 ~ 240.0 | |

The event is not issued even if there is a change in angle information on the camera.

The module returns -1 when angle information cannot be acquired or there is no reliability in the angle. When the numerical value that adds 0.5 to the real number value and cuts down the fraction part is a multiple of 0°or 180°, it is judged it is the horizontal.

3.173. AngleLevelYaw

This will show the yaw of virtual horizon angle information.

Capability kNkMAIDCapability_AngleLevelYaw

Object types Source

ulType kNkMAIDCapType_float

ulOperations kNkMAIDCapOperation_Get

Data Normal:0.0° or 180.0°±60°

When angle information cannot be acquired : -1

When the camera position is level, the value of this capability is 0°or 180° and the range of angle is from 0.0°, 180.0° to ±60°.

| Camera position | Direction of a lens | Ragne of angle | level |
|------------------|---------------------|-------------------------------------|-------|
| grip is a top | tilted forward | 0.0°~ 60.0° | 0° |
| | tilted back | 0.0°,359.9999847412109375° - 300.0° | |
| grip is a bottom | tilted forward | 180.0° 120.0° | 180° |
| | tilted back | 180.0° 240.0° | |

The event is not issued even if there is a change in angle information on the camera.

The module returns -1 when angle information cannot be acquired or there is no reliability in the angle.

When the numerical value that adds 0.5 to the real number value and cuts down the fraction part is a multiple of 0° or 180°, it is judged it is the horizontal.

3.174. ActiveSlot

Represent when the recording destination is specified in the card, the slot of the recording destination.

Capability kNkMAIDCapability_ActiveSlot

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get

Data one of eNkMAIDActiveSlot

0 : Card not installed

1 : Slot 1

2 : Slot 2

3 : Slot 1 & slot 2

3.175. SaveMedia

This will set the recording media by shooting, shutter-release button or Capability_Capture or Capability_AFCapture, Capability_CaptureDustImage.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_SaveMedia |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | one of eNkMAIDSaveMedia <u>0: Card</u> 1: SDRAM 2: Card + SDRAM |

The following cases, this Capability is read only.

- During movie file recording.
- When the value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.176. TerminateCapture

This capability will terminate bulb exposure shooting and record to SDRAM the image until stopped bulb.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_TerminateCapture |
| Object types | Source |
| ulType | kNkMAIDCapType_Generic |
| ulOperations | kNkMAIDCapOperation_Start |
| Data | pointer to NkMAIDTerminateCapture structure typedef struct tagNkMAIDTerminateCapture { ULONG ulParameter1; ULONG ulParameter2; } NkMAIDTerminateCapture, FAR* LPNkMAIDTerminateCapture; |

When during movie recording, the ulOperations of this capability cannot be performed.

3.177. BlinkingStatus

This will show the status of the display a shutter speed and an aperture of the camera.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_BlinkingStatus |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get |
| Data | one of eNkMAIDBlinkStatus <u>0: Both a shutter speed and an aperture are displayed with normal status.</u> 1: Only a shutter speed is displayed with blinking status. 2: Only an aperture is displayed with blinking status. 3: Both a shutter speed and an aperture are displayed with blinking status. |

During Bulb warning or Time warning, this capability is set to 1.

3.178. LiveViewExposurePreview

This will set whether reflect the exposure at the shooting to live view image.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_LiveViewExposurePreview |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDLiveViewExposurePreview <u>0: Off</u> 1: On |

The following cases, this Capability is read only.

- When the value of Capability_ShutterSpeed is “bulb”. (D810 only)
- When the value of Capability_ShutterSpeed is “Time”. (D810 only)
- When the value of Capability_SpotWBMode is 1(ON).
- It is not during live view photography.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.179. LiveViewSelector

This will select live view photography or movie live view.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_LiveViewSelector |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDLiveViewSelector <u>0: live view photography</u> 1: movie live view |

The following cases, this Capability cannot be set into.

- When the Capability_LockCamera is “False”.
- During movie file recording.
- When the value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.180. LiveViewWBMode

This will set white balance that reflects to live view image during live view photography.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_LiveViewWBMode |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | Auto, Incandescent, Fluorescent, Sunny, Flash, Shade, Cloudy, Preset, Color Temperature <u>OFF</u> |

This Capability expresses white balance at live view photography.

When the value of this Capability is “OFF”, the value of “white balance at live view photography” which is acquired by Capability_GetLiveViewImage is set to 0:”Not Used”

If using white balance at live view photography, the value of this capability must be set to except “OFF”.

In the following case, not the value of this Capability but the value of kNkMAIDCapability_WBMode is used.

- The photography taken during live view.
- The value of Capability_LiveViewSelector is “1: move live view”.
- When the value of “white balance at live view photography” which is acquired by Capability_GetLiveViewImage is set to 0:”Not Used”

The following cases, this Capability is read only.

- It is not during live view photography.
- The value of Capabilty_LiveViewImageZoomRate is except “0: Whole display”.
- When the value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.181. **ResetWBMode**

This will reset the white balance adjustment of Capability_WBMode or Capability_LiveViewWBMode.

Capability kNkMAIDCapability_ResetWBMode

Object types Source

ulType kNkMAIDCapType_Process

ulOperations kNkMAIDCapOperation_Start

Data none

The following cases, the ulOperations of this capability cannot be performed.

- When the value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.182. MovieShutterSpeed

This will set the shutter speed during movie live view

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_MovieShutterSpeed |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | Strings of shutter time in second. (e.g.) "1/30", "1/40", "1/50" |

It is used for the exposure time of each frame of the movie file photoed.

Capability_MovieAperture used for shutter speed setting during movie live view.

During live view photography, Capability_ShutterSpeed is used for shutter speed.

The value range of this capability is changed by the setting of Capability_EVInterval, Capability_ExternalFlashStatus, Capability_ExternalFlashSort, Capability_MovieScreenSize.

The lowest shutter speed is changed by the setting of movie frame rate as follows.

| movie frame rate | Lowest shutter speed |
|------------------|----------------------|
| 60fps | 1/60 |
| 50fps | 1/50 |
| 30fps | 1/30 |
| 25fps | 1/25 |
| 24fps | 1/25 |

The following cases, this Capability is read only.

- When the value of Capability_LiveViewStatus is "OFF".
- When the value of Capability_LiveViewSelector is "0: live view photography".
- When the value of Capability_ExposureMode is "Program", "Aperture Priority", or "Speed priority".
- When sequence error has occurred.
- When the value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.183. MovieAperture

This will set the aperture during movie live view

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_MovieAperture |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | String of F value. (e.g.) "1.4", "1.6", "1.8"... |

This capability is used for movie live view.

When CPU lens is not attached, this capability returns aperture of the Capability_F0Manual setting. If the Capability_F0Manual is set to "N/A", it returns "--".

The following cases, this Capability is read only.

- When the value of Capability_ExposureMode is "Program" or "Speed priority".
- When lens is not attached
- When sequence error has occurred.
- When the value of Capability_LiveViewStatus is "OFF".
- When the value of Capability_LiveViewSelector is "0: live view photography".
- When a lens with aperture ring is attached and Capability_ApertureDial is false
- When the value of Capability_ApertureLockSetting is "1: On".
- When the value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.184. MovieSensitivity

This will select the sensitivity for movie live view. (shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_MovieSensitivity |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | The value which can be set is changed by the setting of Capability_CameraType、Capability_SensitivityInterval. |

| D810 | | |
|---|---|--|
| Capability_SensitivityInterval | | |
| 1/3 step | 1/2 step | 1 step |
| 64,80, <u>100</u> , 125,160,200, 250,320, 400,500,640, 800,1000,1250, 1600,2000,2500, 3200,4000,5000, 6400,8000, 10000,12800, Hi-0.3,Hi-0.7, Hi-1.0,Hi-2.0, | 64,72, <u>100</u> , 140,200, 280,400, 560,800,1100, 1600,2200,3200, 4500,6400, 9000,12800, Hi-0.5, Hi-1.0, Hi-2.0, | 64, <u>100</u> , 200, 400, 800, 1600, 3200, 6400, 12800, Hi-1.0, Hi-2.0, |

| D810A | | |
|---|--|---|
| Capability_SensitivityInterval | | |
| 1/3 step | 1/2 step | 1 step |
| <u>200</u> , 250, 320, 400, 500, 640, 800, 1000, 1250, 1600, 2000, 2500, 3200, 4000,5000, 6400, 8000, 10000, 12800, Hi-0.3, Hi-0.7, Hi-1.0, Hi-2.0, | <u>200</u> , 280, 400, 560, 800, 1100, 1600, 2200, 3200, 4500, 6400, 9000, 12800, Hi-0.5, Hi-1.0, Hi-2.0, | <u>200</u> , 400, 800, 1600, 3200, 6400, 12800, Hi-1.0, Hi-2.0, |

The following cases, this Capability is read only.

- When the value of Capabilty_ExpodureMode is except “Manual”.
- When the value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.185. MovieExposureComp

This will set the exposure compensation for movie live view.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_MovieExposureComp |
| Object types | Source |
| ulType | kNkMAIDCapType_Range |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |
| Data | -3 - +3EV(Default value: 0) |

The module sets the step value same as Capability_ExpCompInterval. When the Capability_ExpCompInterval is changed, the module sends to the client kMAIDEvent_CapChange.

The following cases, this Capability is read only.

- When the value of Capability_LiveViewStatus is "OFF".
- When the value of Capability_LiveViewSelector is "0: live view photography".
- When the value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.186. RetractableLensWarningStatus

Represent the state of the lens retracted warning.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_RetractableLensWarningStatus |
| Object types | Source |
| ulType | kNkMAIDCapType_Boolean |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault |
| Data | True: Warning collapsed during <u>False</u> : Not a warning in the collapsed |

3.187. MovieWindNoiseReduction

This will set the shooting menu, [Movie setting – Wind noise reduction]. (Shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_MovieWindNoiseReduction |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDMovieWindNoiseReduction <u>0: OFF</u> 1: ON |

The following cases, this Capability cannot be set into.

- During movie file recording.
- When having connected the external microphone.
- When the value of Capability_SpotWBMode is 1(ON).
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.188. MovieRecordingZone

This will set the shooting menu, [Movie setting – Frequency response]. (Shooting menu)

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_MovieRecordingZone |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDMovieRecordingZone <u>0: Wide range</u> 1: Vocal range |

The following cases, this Capability is read only.

- When the value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.189. MovieISOControl

This will set the shooting menu, [Movie setting – Movie ISO sensitivity setting – Auto ISO control]. (Shooting menu)

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_MovieISOControl |
| Object types | Source |
| ulType | kNkMAIDCapType_Boolean |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | True: On <u>False: Off</u> |

The following cases, this Capability is read only.

- When the value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.190. MovieISOAutoHighLimit

This will set the shooting menu, [Movie setting – Movie ISO sensitivity setting – Maximum sensitivity]. (Shooting menu)

Capability kNkMAIDCapability_MovieISOAutoHiLimit

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get,
kNkMAIDCapOperation_GetDefault,
kNkMAIDCapOperation_Set

Data one of eNkMAIDMovieISOAutoHiLimit3,
eNkMAIDMovieISOAutoHiLimit4

| D810 | | | | |
|-----------------------------|---------------------|---------------------|-----|---|
| eNkMAIDMovieISOAutoHiLimit3 | Maximum sensitivity | SensitivityInterval | | |
| | | 1/3 | 1/2 | 1 |
| 0 | 200 | ○ | ○ | ○ |
| 1 | 250 | ○ | × | × |
| 2 | 280 | × | ○ | × |
| 3 | 320 | ○ | × | × |
| 4 | 400 | ○ | ○ | ○ |
| 5 | 500 | ○ | × | × |
| 6 | 560 | × | ○ | × |
| 7 | 640 | ○ | × | × |
| 8 | 800 | ○ | ○ | ○ |
| 9 | 1000 | ○ | × | × |
| 10 | 1100 | × | ○ | × |
| 11 | 1250 | ○ | × | × |
| 12 | 1600 | ○ | ○ | ○ |
| 13 | 2000 | ○ | × | × |
| 14 | 2200 | × | ○ | × |
| 15 | 2500 | ○ | × | × |
| 16 | 3200 | ○ | ○ | ○ |
| 17 | 4000 | ○ | × | × |
| 18 | 4500 | × | ○ | × |
| 19 | 5000 | ○ | × | × |
| 20 | 6400 | ○ | ○ | ○ |
| 21 | 8000 | ○ | × | × |
| 22 | 9000 | × | ○ | × |
| 23 | 10000 | ○ | × | × |
| 24(Default) | 12800 | ○ | ○ | ○ |
| 25 | Hi-0.3 | ○ | × | × |
| 26 | Hi-0.5 | × | ○ | × |
| 27 | Hi-0.7 | ○ | × | × |
| 28 | Hi-1.0 | ○ | ○ | ○ |
| 29 | Hi-2.0 | ○ | ○ | ○ |

| D810A | | | | |
|-----------------------------|------------------------|---------------------|-----|---|
| eNkMAIDMovieISOAutoHiLimit4 | Maximum sensitivity | SensitivityInterval | | |
| | | 1/3 | 1/2 | 1 |
| 0 | 400 | ○ | ○ | ○ |
| 1 | 500 | ○ | × | × |
| 2 | 560 | × | ○ | × |
| 3 | 640 | ○ | × | × |
| 4 | 800 | ○ | ○ | ○ |
| 5 | 1000 | ○ | × | × |
| 6 | 1100 | × | ○ | × |
| 7 | 1250 | ○ | × | × |
| 8 | 1600 | ○ | ○ | ○ |
| 9 | 2000 | ○ | × | × |
| 10 | 2200 | × | ○ | × |
| 11 | 2500 | ○ | × | × |
| 12 | 3200 | ○ | ○ | ○ |
| 13 | 4000 | ○ | × | × |
| 14 | 4500 | × | ○ | × |
| 15 | 5000 | ○ | × | × |
| 26 | 6400 | ○ | ○ | ○ |
| 17 | 8000 | ○ | × | × |
| 18 | 9000 | × | ○ | × |
| 19 | 10000 | ○ | × | × |
| 20(Default) | 12800 | ○ | ○ | ○ |
| 21 | Hi-0.3 | ○ | × | × |
| 22 | Hi-0.5 | × | ○ | × |
| 23 | Hi-0.7 | ○ | × | × |
| 24 | Hi-1.0 | ○ | ○ | ○ |
| 25 | Hi-2.0 | ○ | ○ | ○ |

The value which can be set up by setup of Capability_SensitivityInterval changes.

If it is set to the value which cannot be set up, the module returns an error (kNkMAIDResult_NotSupported).

The following cases, this Capability is read only.

- When the value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.191. ISOControlSensitivity

This capability will show ISO sensitivity which the camera is controlling.

Capability kNkMAIDCapability_ISOControlSensitivity

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get

Data one of eNkMAIDISOControlSensitivity3,
eNkMAIDISOControlSensitivity4

| D810 | | | |
|-------------------------------|---------|-------------------------------|----------|
| eNkMAIDISOControlSensitivity3 | value | eNkMAIDISOControlSensitivity3 | value |
| 32 | Lo 1 | 5000 | ISO5000 |
| 40 | Lo 0.7 | 5600 | ISO5600 |
| 45 | Lo 0.5 | 6400 | ISO6400 |
| 56 | Lo 0.3 | 7200 | ISO7200 |
| 64 | ISO64 | 8000 | ISO8000 |
| 72 | ISO72 | 9000 | ISO9000 |
| 80 | ISO80 | 10000 | ISO10000 |
| 100 | ISO100 | 11000 | ISO11000 |
| 110 | ISO110 | 12800 | ISO12800 |
| 125 | ISO125 | 14400 | Hi0.2 |
| 140 | ISO140 | 16000 | Hi0.3 |
| 160 | ISO160 | 18000 | Hi0.5 |
| 180 | ISO180 | 20000 | Hi0.7 |
| 200 | ISO200 | 22000 | Hi0.8 |
| 220 | ISO220 | 25600 | Hi1.0 |
| 250 | ISO250 | 28800 | Hi1.2 |
| 280 | ISO280 | 32000 | Hi1.3 |
| 320 | ISO320 | 36000 | Hi1.5 |
| 360 | ISO360 | 40000 | Hi1.7 |
| 400 | ISO400 | 45600 | Hi1.8 |
| 450 | ISO450 | 51200 | Hi2.0 |
| 500 | ISO500 | | |
| 560 | ISO560 | | |
| 640 | ISO640 | | |
| 720 | ISO720 | | |
| 800 | ISO800 | | |
| 900 | ISO900 | | |
| 1000 | ISO1000 | | |
| 1100 | ISO1100 | | |
| 1250 | ISO1250 | | |
| 1400 | ISO1400 | | |
| 1600 | ISO1600 | | |
| 1800 | ISO1800 | | |
| 2000 | ISO2000 | | |
| 2200 | ISO2200 | | |
| 2500 | ISO2500 | | |
| 2800 | ISO2800 | | |
| 3200 | ISO3200 | | |
| 3600 | ISO3600 | | |
| 4000 | ISO4000 | | |
| 4500 | ISO4500 | | |

| D810A | | | |
|-------------------------------|---------|-------------------------------|----------|
| eNkMAIDISOControlSensitivity4 | value | eNkMAIDISOControlSensitivity4 | value |
| 100 | Lo 1 | 5000 | ISO5000 |
| 125 | Lo 0.7 | 5600 | ISO5600 |
| 140 | Lo 0.5 | 6400 | ISO6400 |
| 160 | Lo 0.3 | 7200 | ISO7200 |
| 200 | ISO200 | 8000 | ISO8000 |
| 220 | ISO220 | 9000 | ISO9000 |
| 250 | ISO250 | 10000 | ISO10000 |
| 280 | ISO280 | 11000 | ISO11000 |
| 320 | ISO320 | 12800 | ISO12800 |
| 360 | ISO360 | 14400 | Hi0.2 |
| 400 | ISO400 | 16000 | Hi0.3 |
| 450 | ISO450 | 18000 | Hi0.5 |
| 500 | ISO500 | 20000 | Hi0.7 |
| 560 | ISO560 | 22000 | Hi0.8 |
| 640 | ISO640 | 25600 | Hi1.0 |
| 720 | ISO720 | 28800 | Hi1.2 |
| 800 | ISO800 | 32000 | Hi1.3 |
| 900 | ISO900 | 36000 | Hi1.5 |
| 1000 | ISO1000 | 40000 | Hi1.7 |
| 1100 | ISO1100 | 45600 | Hi1.8 |
| 1250 | ISO1250 | 51200 | Hi2.0 |
| 1400 | ISO1400 | | |
| 1600 | ISO1600 | | |
| 1800 | ISO1800 | | |
| 2000 | ISO2000 | | |
| 2200 | ISO2200 | | |
| 2500 | ISO2500 | | |
| 2800 | ISO2800 | | |
| 3200 | ISO3200 | | |
| 3600 | ISO3600 | | |
| 4000 | ISO4000 | | |
| 4500 | ISO4500 | | |

3.192. LiveViewImageSize

This will set the size for Live View image

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_LiveViewImageSize |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set |
| Data | one of eNkMAIDLiveViewImageSize 1: QVGA <u>2: VGA</u> |

The following cases, this Capability is read only.

- When the value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.193. SpotWBMode

This will set the ON / OFF state of waiting to acquire SpotWB.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_SpotWBMode |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | one of eNkMAIDSpotWBMode <u>0: OFF</u> 1: ON |

When set to 1 (ON) to start the state of waiting to acquire SpotWB, the value of this Capability set to 0 (OFF), then stop.

This capability can not get dynamically “ON / OFF”, state of waiting to acquire SpotWB.

If acquired by Capability_GetLiveViewImage “SpotWB status” was “3: OFF (acquisition success)”, “State of waiting to acquire SpotWB” will be released automatically by the camera this capability must be set to “0: OFF”.

The value of Capability_LiveViewImageZoomRate set “100%” even if the value of Capability_LiveViewImageZoomRate is “200%” when Capability_SpotWBMode change OFF to ON.

The following cases, this Capability cannot be set into.

- During movie file recording.
- When the value of Capability_LiveViewStatus is "OFF".
- When the value of Capability_HDRMode is except “0: OFF”.
- When the value of Capability_WBMode is except “Preset1~6” or state of “Preset1~6” is protected.
- When the value of Capability_LiveViewSelector is “0: live view photography” and the value of Capability_LiveViewWBMode is except “OFF”.
- When the value of Capability_LiveViewSelector is “1: movie live view” and the value of Capability_MovieReleaseButton is “1: Record movies”.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.194. SpotWBMeasure

This capability obtain SpotWB information

| | |
|---------------------|---------------------------------|
| Capability | kNkMAIDCapability_SpotWBMeasure |
| Object types | Source |
| ulType | kNkMAIDCapType_Process |
| ulOperations | kNkMAIDCapOperation_Start |
| Data | None |

This capability acquires SpotWB information for coordinates specified by Capability_ChangeSpotWBArea.

“SpotWB information” result of the acquisition will be notified in “SpotWB status” to get in the Capability_GetLiveViewImage.

After acquires SpotWB information, the client can obtain the WB information again.

The following cases, this Capability cannot be set into.

- When the value of Capability_SpotWBMode is “0(OFF)”.
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.195. SpotWBChangeArea

This Capability is used to change the SpotWB area while waiting for SpotWB acquisition.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_SpotWBChangeArea |
| Object types | Source |
| ulType | kNkMAIDCapType_Point |
| ulOperations | kNkMAIDCapOperation_Set |
| Data | struct NkMAIDPoint { SLONG x; Coordinates of the X-axis SLONG y; Coordinates of the Y-axis } |

This capability set the focus point by using x and y of NkMAIDPoint structure.

The value range of x and y is defined by “total size” of “Display information” in Live View image. (Please refer NkMAIDCapability_GetLiveViewImage)

But the range that can be actually set becomes an area where subtracted the half of "size of the AF frame" length and width from "total size", respectively.

When the value that exceeds the range of x and y is set, the maximum or minimum value will be used as this value.

The following cases, this Capability cannot be set into.

- When the value of Capability_SpotWBMode is “0(OFF)”.
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.196. SpotWBResultDispEnd

This capability releases the display of SpotWB result.

| | |
|---------------------|---------------------------------------|
| Capability | kNkMAIDCapability_SpotWBResultDispEnd |
| Object types | Source |
| ulType | kNkMAIDCapType_Process |
| ulOperations | kNkMAIDCapOperation_Start |
| Data | None |

By executing this capability, the value of the "SpotWB status", retrieved by GetLiveViewImage, is modified as follows.

- 3: Waiting(Acquisition success) → 1: Waiting(Not acquired), or
- 4: Waiting(Acquisition failure) → 1: Waiting(Not acquired)

The following cases, this Capability cannot be set into.

- When the value of Capability_SpotWBMode is "0(OFF)".
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.197. RawJpegTransferStatus

This capability will set the type of SDRAM image which be notified and transmitted to a client, when the value of Capability_SaveMedia is "2: Card + SDRAM" and the value of Capability_CompressionLevel is "RAW + JPEG".

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_RawJpegTransferStatus |
| Object types | Source |
| ulType | kNkMAIDCapType_ Boolean |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault |
| Data | True : JPEG only <u>False : RAW & JPEG</u> |

The following cases, the ulVisibility of this capability is invalid. (The ulOperations is can set.)

- When the value of Capability_CompressionLevel is except "RAW + JPEG".
- When the value of Capability_SaveMedia is except "2: Card + SDRAM".

The following cases, this capability can not be set to.

- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

This capability is always can be set into but setting change of this capability is taken as prohibition until it receives kNkMAIDEvent_CaptureComplete about SDRAM from the execution start of "Capability_Capture", "Capability_AFCapture", and "Capability_CaptureDustImage"

3.198. MovieMeteringMode

Set the metering mode to be used in live view video.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_MovieMeteringMode |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set kNkMAIDCapOperation_GetDefault |
| Data | one of eNkMAIDMovieMeteringMode <u>0: Matrix</u> 1: Center weighted 2: Highlight |

When CPU lens is not installed, or AF lens G-type, D-type other than, Ai-P lens, the field scope lens is attached, the value of this Capability is: If it is set to "2 Highlight (highlight-weighted metering)" to is: It works as "1 Center weighted (center-weighted metering)".

The following cases, this Capability is read only

- It is not during movie live view.
- The value of Capability_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capability_MirrorUpStatus is 1(ON). (D810A only)

3.199. MirrorUpCancel (D810A only)

This capability cancels the mirror up.

| | |
|---------------------|----------------------------------|
| Capability | kNkMAIDCapability_MirrorUpCancel |
| Object types | Source |
| ulType | kNkMAIDCapType_Process |
| ulOperations | kNkMAIDCapOperation_Start |
| Data | None |

If this capability is started except waiting 2nd release of mirror up shooting, kNkMAIDResult_ValueOutOfBounds is returned.

3.200. MirrorUp Status (D810A only)

Represent the status of the mirror.

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_MirrorUpStatus |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get |
| Data | one of eNkMAIDMirrorUpStatus 0: Mirror Down 1: Mirror Up |

3.201. MirrorUp ReleaseShootingCount (D810A only)

Represent the number of required release for mirror up shooting.

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_MirrorUpSReleaseShootingCount |
| Object types | Source |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get |
| Data | one of eNkMAIDMirrorUpSReleaseShootingCount 0: Zero 1: Once 2: Twice |

When Capability_ShootingMode is except 4 (Mirror up), this capability is set to 0.

The number of required release changes depending on the following cases.

| The Status of Camera | The Maximum number of required release |
|----------------------|--|
| Finder | 2 |
| During LiveView | 1, 2 |
| During Mirror up | 1 |

4. Standard Capabilities

4.1. AsyncRate

| | |
|---------------------|-----------------------------|
| Capability | kNkMAIDCapability_AsyncRate |
| Object types | Module |
| ulType | kNkMAIDArrayType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get |

4.2. ProgressProc

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_ProgressProc |
| Object types | Source, Image, Thumbnail, Video |
| ulType | kNkMAIDCapType_Callback |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |

4.3. EventProc

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_EventProc |
| Object types | Module, Source, Item, Image, Thumbnail, Video |
| ulType | kNkMAIDCapType_Callback |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |

4.4. DataProc

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_DataProc |
| Object types | Image, Thumbnail |
| ulType | kNkMAIDCapType_Callback |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |

4.5. UIRequestProc

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_UIRequestProc |
| Object types | Module |
| ulType | kNkMAIDCapType_Callback |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |

4.6. IsAlive

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_IsAlive |
| Object types | Module, Source, Item, Image, Thumbnail, Video |
| ulType | kNkMAIDCapType_Boolean |
| ulOperations | kNkMAIDCapOperation_Get |

4.7. Children

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_Children |
| Object types | Module, Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray |

4.8. State

| | |
|-------------------|-------------------------|
| Capability | kNkMAIDCapability_State |
| | Not supported |

4.9. Name

| | |
|---------------------|---|
| Capability | kNkMAIDCapability_Name |
| Object types | Module, Source, Item, Image, Thumbnail, Video |
| ulType | kNkMAIDCapType_String |
| ulOperations | kNkMAIDCapOperation_Get |

The image saved on SDRAM is taken a picture on the mode Capability_SaveMedia is "1:SDRAM", the value of this capability about Item, Image, Thumbnail is "DSC_0000.xxx".

The image saved on SDRAM is taken a picture on the mode Capability_SaveMedia is "2:Card + SDRAM", the value of this capability about Item, Image, Thumbnail is "folder name¥filename.xxx". However, when the image doesn't exist the on the card (For the reasons card was not inserted), "DSC_0000.xxx" is used.

4.10. Description

| | |
|-------------------|-------------------------------|
| Capability | kNkMAIDCapability_Description |
| | Not supported |

4.11. Interface

| | |
|---------------------|-----------------------------|
| Capability | kNkMAIDCapability_Interface |
| Object types | Source |
| ulType | kNkMAIDCapType_String |
| ulOperations | kNkMAIDCapOperation_Get |

4.12. DataTypes

| | |
|---------------------|-----------------------------|
| Capability | kNkMAIDCapability_DataTypes |
| Object types | Source, Item |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get |

4.13. DateTime

| | |
|---------------------|----------------------------|
| Capability | kNkMAIDCapability_DateTime |
| Object types | Item |
| ulType | kNkMAIDCapType_DateTime |
| ulOperations | kNkMAIDCapOperation_Get |

4.14. StoredBytes

| | |
|---------------------|-------------------------------|
| Capability | kNkMAIDCapability_StoredBytes |
| Object types | Item, Image, Thumbnail, Video |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get |

4.15. Eject

| | |
|-------------------|-------------------------|
| Capability | kNkMAIDCapability_Eject |
| | Not supported |

4.16. Feed

| | |
|-------------------|------------------------|
| Capability | kNkMAIDCapability_Feed |
| | Not supported |

4.17. Capture

This will take a picture and save the image to specified media.

| | |
|---------------------|---------------------------|
| Capability | kNkMAIDCapability_Capture |
| Object types | Source |
| ulType | kNkMAIDCapType_Process |
| ulOperations | kNkMAIDCapOperation_Start |

When the Capability_ShootingMode is 1(C) or 2(CH) or 10(Continuous Quiet), the number of shots set by the Capability_ContinuousShootingNum is taken on continuous shooting mode.

Number of shots is the smallest in value of the Capability_ContinuousShootingNum or value of the Capability_RemainContinuousShooting or Bracketing Shot is remaining number of frames.

When the Capability_ShootingMode is 4(Mirror up), or movie file recording and Capability_MovieReleaseButton is not Live frame grab, the ulVisibility and ulOperations of this capability is set to invalid.

When image is prepared to acquire, kNkMAIDEvent_Add is issued to source object.

If the client executes this capability while doing Live view, Live view will be stopped by camera, and the camera take a picture with AF position set on Live view without Auto focus.

The media saved an image is specified by Capability_SaveMedia. When there is not free space in specified media, this capability returns kMAIDResult_MediaFull. And this capability returns kNkMAIDResult_NoMedia when card is under being formatted or no card is inserted.

If mirror up is started by camera already,

kNkMAIDResult_MirrorUpCapture_Already_Start is returned.

Bulb exposure shootng can be executed when Capability_LockCamera is true and Capability_ExposureMode is Manual and Capability_ShutterSpeed is buib. The bulb shooting is started by this capability and terminated by Capability_TerminateCapture.

[In the case of D810A]

D810A Camera can shoot in during mirror up by the command.

When the Capability_ShootingMode is “4: Mirror up”, mirror up (1st release) is started by this capability. After mirror up is completed, the module informs kNkMAIDEvent_1stCaptureComplete.

If this capability is started after mirror up (1st release) is completed, mirror up (2nd release) is started.

Exception:

During LiveView, when Capability_InternalFlashStatus is “2: Close” and Capability_ExternalFlashStatus is “2: Not Exist”,

- The shooting operation is same as “Single shooting”.
- Capability_MirrorUpSReleaseShootingCount is set to “1: Once”.

The following cases, the ulVisibility of this capability is invalid and the ulOperations is set to invalid.

- When the value of Capabilty_ShutterSpeed is “Time”.
- When the value of Capabilty_RetractableLensWarningStatus is “True”.
- When during movie recording.
- Capability_ShootingMode is Mirror up. (D810 only)
- When the value of Capabilty_SpotWBMode is 1(ON).

4.18. Mode

Capability kNkMAIDCapability_Mode
Not supported

4.19. Acquire

Capability kNkMAIDCapability_Acquire
Object types Image, Thumbnail
ulType kNkMAIDCapType_Process
ulOperations kNkMAIDCapOperation_Start

When Object types are set to Thumbnail, this Capability may return kNkMAIDResult_NotSupported error.

When it detects the camera's internal image generation, the module starts reading the Image. Then, the module cache inside it.(Look-ahead processing)

Thumbnail obtaining and caching is not performed in the look-ahead processing.

When loading is complete Image, Inside the camera, the entire image data including a Thumbnail will be deleted.

Therefore, if after the completion of the process ahead, was executed this Capability for Thumbnail, this Capability is kNkMAIDResult_NotSupported error.

For reacquisition when the shooting took place at set "RAW + JPEG". If one image data can be transmitted is successfully carried out only image data of the other re-transmission.

4.20. Start

Capability kNkMAIDCapability_Start
Not supported

4.21. Length

Capability kNkMAIDCapability_Length
Not supported

4.22. SampleRate

Capability kNkMAIDCapability_SampleRate
Not supported

4.23. Stereo

Capability kNkMAIDCapability_Stereo
Not supported

4.24. Samples

Capability kNkMAIDCapability_Samples
Not supported

4.25. Filter

Capability kNkMAIDCapability_Filter
Not supported

4.26. Prescan

Capability kNkMAIDCapability_Prescan
Not supported

4.27. AutoFocus

This will execute phase detection AF.

Capability kNkMAIDCapability_AutoFocus
Object types Source
ulType kNkMAIDCapType_Process
ulOperations kNkMAIDCapOperation_Start

The following cases, the ulVisibility of this capability is invalid and the ulOperations is set to invalid.

- When the value of Capability_SpotWBMode is “0(OFF)”.
- During movie file recording.
- When the value of Capability_FocusMode is “MF”.
- When CPUlens is not attached
- When the value of Capability_LiveViewStatus is 1(ON).

4.28. AutoFocusPt

Capability kNkMAIDCapability_AutoFocusPt
Not supported

4.29. Focus

Capability kNkMAIDCapability_Focus
Not supported

4.30. Coords

Capability kNkMAIDCapability_Coords
Not supported

4.31. Resolution

Capability kNkMAIDCapability_Resolution
Not supported

4.32. Preview

Capability kNkMAIDCapability_Preview
Not supported

4.33. Negative

Capability kNkMAIDCapability_Negative
Not supported

4.34. Bits

Capability kNkMAIDCapability_Bits
Not supported

4.35. Planar

Capability kNkMAIDCapability_Planar
Not supported

4.36. Lut

Capability kNkMAIDCapability_Lut
Not supported

4.37. Transparency

Capability kNkMAIDCapability_Transparency
Not supported

4.38. Threshold

Capability kNkMAIDCapability_Threshold
Not supported

4.39. Pixels

Capability kNkMAIDCapability_Pixels
Object types Image, Thumbnail, Video
ulType kNkMAIDCapType_Size
ulOperations kNkMAIDCapOperation_Get

4.40. ForceScan

Capability kNkMAIDCapability_ForceScan

Not supported

4.41. ForcePrescan

Capability kNkMAIDCapability_ForcePrescan

Not supported

4.42. ForceAutoFocus

Capability kNkMAIDCapability_ForceAutoFocus

Not supported

4.43. NegativeDefault

Capability kNkMAIDCapability_NegativeDefault

Not supported

4.44. Firmware

Capability kNkMAIDCapability_Firmware

Not supported

4.45. CommunicationLevel1

Capability kNkMAIDCapability_CommunicationLevel1

Not supported

4.46. CommunicationLevel2

Capability kNkMAIDCapability_CommunicationLevel2

Not supported

4.47. BatteryLevel

Capability kNkMAIDCapability_BatteryLevel

Object types Source

ulType kNkMAIDCapType_Integer

ulOperations kNkMAIDCapOperation_Get

Data 1, 20, 40, 60, 80, 100

This will show the remain of battery by percent.

The camera returns the 6 kind of value, 1, 20, 40, 60, 80 and 100.

When the value of this capability is 1, the current camera status will be set to the prohibition of taking a picture, and the value of Capability_LiveViewProhibit is set to 0x00000100 ("battery shortage").

When the external power supply is used, this capability returns -1.

4.48. FreeBytes

Not supported

4.49. FreeItems

Not supported

4.50. Remove

Not supported

4.51. FlashMode

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_FlashMode |
| Object types | Source |
| ulType | kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set, |
| Data | one of eNkMAIDFlashMode, eNkMAIDFlashModeDX2 0: FrontCurtain 1: Rear-curtain sync 2: Slow 3: Red-eye reduction 4: Slow sync with red-eye reduction 5: Slow rear-curtain sync 262: Flash Off |

| Flash mode ExposureMode SceneMode | FrontCurtain | Slow | Rear-curtain sync (Slow rear-curtain sync on P,A) | Red-eye reduction | Slow sync with red-eye reduction |
|---|--------------|------|---|----------------------|---|
| P, A | ●,△ | ●,△ | ●,△ | ●,△ | ●,△ |
| S, M | ●,△ | — | ●,△ | ●,△ | — |

● : Can be set (= external Speedlite Disabled) Built-in Speedlight is enabled

△: When external speed light is active (=external speed light is attached and power on), it is available.

—: Not supported

When Capability_ExternalNewTypeFlashMode is 7 (“Repeating flash”) ,

“Rear-curtain sync” can not be set and 0 “FrontCurtain” will be set.

When Capability_ExposureMode is P or S and “1(Rear-curtain sync)”, this Capability is “5(Slow rear-curtain)”.

The following cases, the value of this Capability is “256: Flash Off” and the ulOperations is read only.

- When the value of Capabilty_HDRMode is except “Off”.
- During live view photography.

The following cases, this Capability is read only.

- When the value of Capability_SpotWBMode is 1(ON).

4.52. ModuleType

| | |
|---------------------|------------------------------|
| Capability | kNkMAIDCapability_ModuleType |
| Object types | Module |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get |

4.53. AcquireStreamStart

| | |
|-------------------|--------------------------------------|
| Capability | kNkMAIDCapability_AcquireStreamStart |
| | Not supported |

4.54. AcquireStreamStop

| | |
|-------------------|-------------------------------------|
| Capability | kNkMAIDCapability_AcquireStreamStop |
| | Not supported |

4.55. AcceptDiskAcquisition

| | |
|---------------------|--|
| Capability | kNkMAIDCapability_AcceptDiskAcquisition |
| Object types | Source |
| ulType | kNkMAIDCapType_Generic |
| ulOperations | kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set |

4.56. Version

| | |
|---------------------|---------------------------|
| Capability | kNkMAIDCapability_Version |
| Object types | Module |
| ulType | kNkMAIDCapType_Unsigned |
| ulOperations | kNkMAIDCapOperation_Get |

4.57. FilmFormat

| | |
|-------------------|------------------------------|
| Capability | kNkMAIDCapability_FilmFormat |
| | Not supported |

4.58. TotalBytes

| | |
|-------------------|------------------------------|
| Capability | kNkMAIDCapability_TotalBytes |
| | Not supported |

5. Event

The client can't receive the event as follows while opening item object.

5.1. AddChild

This event will be issued when the child is added under an object.

Event kNkMAIDEvent_AddChild

Object types Module, Source, Item

data parameter Added child ID

When the added child is Item Object, Item ID will be set to the data parameter of call back function.

This event is issued only about the image preserved in SDRAM. The image preserved on the card is not issued.

5.2. RemoveChild

This event will be issued when the child is removed under an object.

Event kNkMAIDEvent_RemoveChild

Object types Module, Source, Item

data parameter Removed child ID

5.3. WarmingUp

Event kNkMAIDEvent_WarmingUp

Not supported

5.4. WarmedUp

Event kNkMAIDEvent_WarmedUp

Not supported

5.5. CapChange

This event will be issued when the information of Capability is changed.

Event kNkMAIDEvent_CapChange

Object types Module, Source, Item

data parameter Capability ID

In the following cases, this event will be issued.

- When the content of structure "NkMAIDCapInfo" of capability was changed.
- When the array data of capability with the type of kNkMAIDCapType_Array was changed.

5.6. OrphanedChildren

Event kNkMAIDEvent_OrphanedChildren

Not supported

5.7. CapChangeValueOnly

This event will be issued when the current value of capability is changed.

Event kNkMAIDEvent_CapChangeValueOnly

Object types Module, Source, Item, Data

data parameter Capability ID

This event will be issued when only the current value of capability is changed (the array data, ulVisibility, ulOperations is not changed).

5.8. CaptureComplete

This will be issued when the acquisition or deletion of all images of which it takes a picture is completed.

Event kNkMAIDEvent_CaptureComplete

Object types Source

data parameter 1 : The all SDRAM images by Capture, AFCapture, CaptureDustImage are finished to read or deleted.
0: The all images by Capture, AFCapture, CaptureDustImage are finished to record in card.

It shows that the all images are finished to record in card or the all SDRAM images were finished to read or deleted.

This event is not issued in case of shooting by shutter-release button.

5.9. AddChildInCard

This event will be issued when the child is added in card.

Event kNkMAIDEvent_AddChildInCard

Object types Item

data parameter Added child ID

When the added child is Item Object, Item ID will be set to the data parameter of call back function.

This event is issued only about the movie data preserved on the card. The still image data preserved on the card is not issued.

5.10. RecordingInterrupted

This will be issued the factor of discontinue when the recording of movie was stopped with error occurring.

Event kNkMAIDEvent_RecordingInterrupted

Object types Source

data parameter 1: Some error.
0: Low access speed card error.

5.11. CapChangeOperationOnly

Operation value or visibility of Capability has changed.

Event kNkMAIDEvent_CapChangeOperationOnly

Object types Module, Source, Item, Data

dataparamater Capability ID

Events to notify (the number of elements in the array, enumeration value configuration, value, etc. has not changed) if only Operation or visibility · Invalid attribute of Capability has changed.

5.12. 1stCaptureComplete (D810A only)

This event will be issued when the mirror up (1st release) is succeeded.

Event kNkMAIDEvent_1stCaptureComplete

Object types Source

dataparamater None

Events to notify when mirror up (1st release) is succeeded by command or camera.

5.13. MirrorUpCancelComplete (D810A only)

This event will be issued when the mirror up is canceled.

Event kNkMAIDEvent_MirrorUpCancelComplete

Object types Source

dataparamater 1: Success
0: Failure

This event informs to notify the result when mirror up cancel is completed by Capability_MirrorUpCancel.

6. Vendor Unique Results

6.1. ApertureFEE

The aperture is not set maximum F number.

| | |
|------------------------|---|
| Result | kNkMAIDResult_ApertureFEE |
| Command | Start |
| Capability | Capture, AFCapture, PreCapture, CaptureDustImage |
| Explanation | If the ExposureMode is set to Program or SpeedPriority and the aperture ring of the lens is not set to maximum F number, the camera cannot execute capture command. |
| Expected Action | The client displays the message to set the aperture to maximum F number and is waiting for next command. |

6.2. BufferNotReady

This is not used in the current module.

6.3. NormalTTL

The speedlight is set TTL mode.

| | |
|------------------------|--|
| Result | kNkMAIDResult_NormalTTL |
| Command | Start |
| Capability | Capture |
| Explanation | The camera cannot take a picture when an external speedlight is attached and it is set TTL(measuring through the lens) mode. |
| Expected Action | The client displays the message that the camera cannot take a picture and is waiting for next command. |

6.4. MediaFull

There are neither free spaces that can be recorded on the card nor a free space that can be recorded with built-in the camera SDRAM.

| | |
|------------------------|--|
| Result | kNkMAIDResult_MediaFull |
| Command | Start |
| Capability | Capture, AFCapture, CaptureDustImage |
| Explanation | There is no free space at the specified media, so the client can not take a picture. |
| Expected Action | The client displays the message that the camera cannot take a picture and is waiting for next command. |

6.5. InvalidMedia

It shows that the client can not take a picture because recording media is broken.

Result kNkMAIDResult_InvalidMedia

Command Start

Capability Capture, AFCapture, CaptureDustImage

Explanation When Capability_SaveMedia is "Card" or "Card + SDRAM" it shows the client can not take a picture because the card is broken.

Expected Action The client displays the message that the camera cannot take a picture and is waiting for next command.

6.6. EraseFailure

This is not used in the current module.

6.7. CameraNotFound

The module did not find a camera on the bus.

Result kNkMAIDResult_CameraNotFound

Command The commands need access to the camera. (most of the commands for the Source, the Item or the Data object.)

Explanation The camera was disconnected. If the client sends Async command to the Module object at intervals, it can tell that the camera is reconnected by AddChild event.

Expected Action The client displays the message that the camera was disconnected and is waiting for next command.

6.8. BatteryDontWork

The main battery in the camera is used up.

Result kNkMAIDResult_BatteryDontWork

Command Start

Capability Capture, AFCapture, CaptureDustImage, PreCapture

Explanation The camera cannot take a picture because of the battery.

Expected Action The client displays the message that the camera cannot take a picture and suggests changing battery.

6.9. ShutterBulb

The exposure time is set to Bulb.

Result kNkMAIDResult_ShutterBulb

Command Start

Capability Capture, AFCapture, CaptureDustImage

Explanation The camera cannot execute capture command if the Capability_ShutterSpeed is set to bulb.

Expected Action The client displays the message that the camera cannot take a picture and is waiting for next command.

6.10. OutOfFocus

Auto focus operation is failed.

Result kNkMAIDResult_OutOfFocus

Command Start

Capability Capture, AutoFocus, AFCapture, CheckContrastAF

Explanation When the Capability_FocusMode is AF-S(1) and auto focus operation is failed, the camera cannot take a picture. Then this error is returned for the start of Capability_Capture or Capability_AFCapture.

In case of the Capability_AutoFocus and Capability_CheckContrastAF, this error will be returned when auto focus is failed.

Expected Action The client displays the message that the camera is out of focus and is waiting for next command.

6.11. Protected

This is not used in the current module.

6.12. FileExists

This is not used in the current module.

6.13. SharingViolation

This is not used in the current module.

6.14. DataTransFailure

An error occurred while data transference.

| | |
|------------------------|--|
| Result | kNkMAIDResult_DataTransFailure |
| Command | Start, Async |
| Capability | Acquire |
| Explanation | If this error occurs while the client read an image from DRAM, it will lose the image. |
| Expected Action | The client aborts the data transference. |

6.15. SessionFailure

The module cannot open source object because the camera cannot open more session.

| | |
|------------------------|---|
| Result | kNkMAIDResult_SessionFailure |
| Command | Open |
| Capability | - |
| Explanation | The camera can open 1 session. If the client tries to open more source object, the module returns this error. |
| Expected Action | The client displays an error message and is waiting for next command. |

6.16. FileRemoved

This is not used in the current module.

6.17. BusReset

This command was aborted because bus-reset occurred.

| | |
|------------------------|---|
| Result | kNkMAIDResult_BusReset |
| Command | any command |
| Capability | any capability |
| Explanation | If bus-reset occurred, the command, which the module is executing, is aborted. Then the module returns this result for the command. |
| Expected Action | The client sends the command again. |

6.18. NonCPULens

This is not used in the current module.

6.19. ReleaseButtonPressed

This is not used in the current module.

6.20. BatteryExhausted

This is not used in the current module.

6.21. CaptureFailure

The camera failed in measuring value for white balance preset data.

| | |
|------------------------|--|
| Result | kNkMAIDResult_CaptureFailure |
| Command | Start |
| Capability | PreCapture |
| Explanation | When it fails in white balance measurement(Capability_PreCapture), this error is returned. |
| Expected Action | The client displays the message to take a picture again and is waiting for next command. |

6.22. InvalidString

This is not used in the current module.

6.23. NotInitialized

This is not used in the current module.

6.24. CaptureDisable

This is not used in the current module.

6.25. DeviceBusy

A camera did not receive a command.

| | |
|------------------------|---|
| Result | kNkMAIDResult_DeviceBusy |
| Command | any command |
| Capability | any capability |
| Explanation | Since a camera is in the state where the command is not receivable, when it is not able to perform, this error returns. |
| Expected Action | This command is sent again or a display of a user interface is returned to the state before command execution. |

6.26. CaptureDustFailure

The camera failed in taking a dust off ref photo.

| | |
|------------------------|--|
| Result | kNkMAIDResult_CaptureDustFailure |
| Command | Start |
| Capability | CaptureDustImage |
| Explanation | When it fails in taking a dust off ref photo(Capability_CaptureDustImage), this error is returned. |
| Expected Action | Do nothing. |

6.27. ICADown

Enumeration of device can not be done correctly because ICA does not work on Mac OS X.

Result kNkMAIDResult_ICADown

Command EnumChildren

Capability Children

Explanation This error is returned when enumeration of device can not be done correctly because ICA does not work. This error code is used only on Mac OS X.

Expected Action The client aborts the command and capability of device search. The client displays the message that the camera must be powered off and client application needs to restart.

6.28. NotLiveView

Live view was automatically stopped by the factor of the camera. (Included the case of that the live view time limit passed.)

Result kNkMAIDResult_NotLiveView

Command Start, Set

Capability GetLiveViewImage

Explanation When live view was automatically stopped by the factor of the camera (Include the case of that the live view time limit passed.), this error is returned.

Expected Action The client displays an error message and is waiting for next command.

6.29. MFDriveEnd

The focus position reached the end of focus area in manual focus.

Result kNkMAIDResult_MFDriveEnd

Command Set

Capability MFDrive

Explanation When the focus position reached the end of focus area by Capability_MFDrive, this error is returned.

Expected Action The client displays an error message and is waiting for next command.

6.30. UnformattedMedia

It shows that the client can not take a picture because the card is unformatted.

Result kNkMAIDResult_UnformattedMedia

Command Start

Capability Capture, AFCapture, CaptureDustImage

Explanation When Capability_SaveMedia is "Card" or "Card + SDRAM" it shows the client can not take a picture because the card is unformatted.

Expected Action The client displays the message that the camera cannot take a picture and is waiting for next command.

6.31. MediaReadOnly

It shows that the client can not take a picture because the card is protected.

Result kNkMAIDResult_MediaReadOnly

Command Start

Capability Capture, AFCapture, CaptureDustImage

Explanation When Capability_SaveMedia is "Card" or "Card + SDRAM" it shows the client can not take a picture because the card is protected.

Expected Action The client displays the message that the camera cannot take a picture and is waiting for next command.

6.32. DuringUpdate

Is not used in the current module.

6.33. BulbReleaseBusy

It shows during bulb exposure shooting.

Result kNkMAIDResult_BulbReleaseBusy

Command Start, Set

Capability Capture

Explanation It shows during bulb exposure shooting

Expected Action If bulb exposure shooting started by Capability_Capture, kNkMAIDResult_BulbReleaseBusy will be returned until bulb exposure shooting is terminated.

6.34. SilentReleaseBusy

It shows during silent shooting.

Result kNkMAIDResult_SilentReleaseBusy

Command Start

Capability Capture

Explanation It shows during silent shooting.

Expected Action If sient shooting started by Capability_Capture, kNkMAIDResult_SilentReleaseBusy will be returned until sient shooting is terminated.

6.35. MovieFrameReleaseBusy

It shows during live frame grab.

| | |
|------------------------|---|
| Result | kNkMAIDResult_MovieFrameReleaseBusy |
| Command | Start |
| Capability | Capture |
| Explanation | It shows during Live frame grab. |
| Expected Action | If Live frame grab began by Capability_Capture, kNkMAIDResult_MovieFrameReleaseBusy will be returned until Live frame grab is terminated. |

6.36. Waitihg_2ndRelease (D810A only)

It shows during mirror up by mirror up shooting and waiting 2nd release.

| | |
|------------------------|---|
| Result | kNkMAIDResult_Waiting_2ndRelease |
| Command | Start |
| Capability | Capture |
| Explanation | It shows during mirror up and waiting 2nd release. |
| Expected Action | It is waiting for next command, Capability_Capture or Capability_MirrorUpCancel. All other capabilities can not be set to and be started. |

6.37. MirrorUpCapture_Already_Start (D810A only)

It shows mirror up is started by camera already.

| | |
|------------------------|--|
| Result | kNkMAIDResult_MirrorUpCapture_Already_Start |
| Command | Start |
| Capability | Capture, AFCapture, CaptureDustImage, PreCapture |
| Explanation | It shows mirror up is started by camera already. |
| Expected Action | The client displays shows an error message and is waiting for next command. |

7. kNkMAIDDataObjType_Video

Capability for which data object type kNkMAIDDataObjType_Video can be used by this module applies to the content described in not the MAID3.1 rule but this document.

8. Capability table that can be set during live view photography, movie live view, movie recording.

The following table shows the capabilities that can be set during live view.

The capabilities not shown in the table can not be set during live view and Operation is set to read only.

The fields marked with “*” represent that this capability is read only under certain conditions. (For details, please refer each capability fields.)

| Capability | | | Live view photography | Movie live view | Movie recording | SpotWB | Mirror up |
|------------|----|---------------------|--------------------------|--------------------|--------------------|--------|--------------|
| 3 | 1 | ImageSize | ○ | ○ | ○ | × | × |
| | 2 | RawImageSize | ○ | ○ | × | × | × |
| | 3 | CompressionLevel | ○ | ○ | ○ | × | × |
| | 4 | WBMode | ○ | ○ | ○ | × | × |
| | 5 | Sensitivity | ○ | ○ | ○ | × | × |
| | 6 | ResetMenuBank | × | × | × | × | × |
| | 7 | MenuBank | × | × | × | × | × |
| | 8 | ShootingBankName | × | × | × | × | × |
| | 9 | CompressRAWEx | ○ | ○ | × | × | × |
| | 10 | WB TuneAuto | ○ | ○ | × | × | × |
| | 11 | WBAutoType | ○ | ○ | × | × | × |
| | 12 | WB TuneIncandescent | ○ | ○ | × | × | × |
| | 13 | WB FluorescentType | ○ | ○ | × | × | × |
| | 14 | WB TuneFluorescent | ○ | ○ | × | × | × |
| | 15 | WB TuneSunny | ○ | ○ | × | × | × |
| | 16 | WB TuneFlash | ○ | ○ | × | × | × |
| | 17 | WB TuneShade | ○ | ○ | × | × | × |
| | 18 | WB TuneCloudy | ○ | ○ | × | × | × |
| | 19 | WB TuneColorTempEx | ○ | ○ | ○ | × | × |
| | 20 | WB TuneColorAdjust | ○ | ○ | × | × | × |
| | 21 | WB TunePreset1 | ○ | ○ | × | × | × |
| | 22 | WB TunePreset2 | ○ | ○ | × | × | × |
| | 23 | WB TunePreset3 | ○ | ○ | × | × | × |
| | 24 | WB TunePreset4 | ○ | ○ | × | × | × |
| | 25 | WB TunePreset5 | ○ | ○ | × | × | × |
| | 26 | WB TunePreset6 | ○ | ○ | × | × | × |
| | 27 | WB PresetProtect1 | ○ | ○ | × | × | × |
| | 28 | WB PresetProtect2 | ○ | ○ | × | × | × |
| | 29 | WB PresetProtect3 | ○ | ○ | × | × | × |
| | 30 | WB PresetProtect4 | ○ | ○ | × | × | × |
| | 31 | WB PresetProtect5 | ○ | ○ | × | × | × |

| Capability | | | Live view photography | Movie live view | Movie recording | SpotWB | Mirror up |
|------------|----|-----------------------------|--------------------------|--------------------|--------------------|--------|--------------|
| 3 | 32 | WBPresetsProtect6 | ○ | ○ | × | × | × |
| | 33 | WBPresetsNumber | ○ | ○ | ○ | × | × |
| | 34 | WBPresetsName | ○ | ○ | × | × | × |
| | 35 | WBPresetsData | ○ | ○ | × | × | × |
| | 36 | WBGainRed | --- | --- | --- | --- | --- |
| | 37 | WBGainBlue | --- | --- | --- | --- | --- |
| | 38 | CCDDDataMode | ○ | ○* | × | × | × |
| | 39 | AutoDXCrop | ○ | ○ | × | × | × |
| | 40 | JpegCompressionPolicy | ○ | ○ | × | × | × |
| | 41 | ImageColorSpace | ○ | ○ | × | × | × |
| | 42 | IsoControl | ○ | ○ | × | × | × |
| | 43 | NoiseReduction | ○ | ○ | × | × | × |
| | 44 | NoiseReductionHighISO | ○ | ○ | × | × | × |
| | 45 | Slot2ImageSaveMode | ○ | ○ | × | × | × |
| | 46 | CompressRAWBitMode | ○ | ○ | × | × | × |
| | 47 | PictureControl | ○ | ○ | × | × | × |
| | 48 | ChangedPictureControl | --- | --- | --- | --- | --- |
| | 49 | PictureControlData | ○ | ○ | × | × | × |
| | 50 | PictureControlDataEx | ○ | ○ | × | × | × |
| | 51 | GetPicCtrlInfo | --- | --- | --- | --- | --- |
| | 52 | DeleteCustomPictureControl | ○ | ○ | × | × | × |
| | 53 | Active_D_Lighting | ○ | ○ | × | × | × |
| | 54 | ISOAutoShutterTime | ○ | ○ | × | × | × |
| | 55 | ISOAutoShutterTimeAutoValue | ○ | ○ | × | × | × |
| | 56 | ISOAutoHiLimit | ○ | ○ | × | × | × |
| | 57 | VignetteControl | ○ | ○ | × | × | × |
| | 58 | MovieScreenSize | ○ | ○ | × | × | × |
| | 59 | MovieImageQuality | ○ | ○ | × | × | × |
| | 60 | MovieRecMicrophone | ○ | ○ | ○* | × | × |
| | 61 | MovieRecMicrophoneValue | ○ | ○ | × | × | × |
| | 62 | MovieRecDestination | ○ | ○ | × | × | × |
| | 63 | PrimarySlot | ○ | ○ | × | × | × |
| | 64 | AutoDistortion | ○ | ○ | × | × | × |
| | 65 | HDRMode | ○ | ○ | × | × | × |
| | 66 | HDRExposure | ○ | ○ | × | × | × |
| | 67 | HDRSmoothing | ○ | ○ | × | × | × |
| | 68 | CustomSettings | ○ | ○ | × | × | × |
| | 69 | CustomBankName | ○ | ○ | × | × | × |

| Capability | | | Live view photography | Movie live view | Movie recording | SpotWB | Mirror up |
|------------|-----|-------------------------------|--------------------------|--------------------|--------------------|--------|--------------|
| 3 | 70 | ResetCustomSetting | ○ | ○ | × | × | × |
| | 71 | AFcPriority | ○ | ○ | × | × | × |
| | 72 | AFsPriority | ○ | ○ | × | × | × |
| | 73 | AFLockOnEx | ○ | ○ | × | × | × |
| | 74 | AFAreaSelector | ○ | ○ | × | × | × |
| | 75 | AFAreaPoint | ○ | ○ | × | × | × |
| | 76 | AFSublight | ○ | ○ | × | × | × |
| | 77 | LimitAFAreaMode | ○ | ○ | × | × | × |
| | 78 | AFModeRestrictions | ○ | ○ | × | × | × |
| | 79 | SensitivityInterval | ○ | ○ | × | × | × |
| | 80 | EVInterval | ○ | ○ | × | × | × |
| | 81 | ExpCompInterval | ○ | ○ | × | × | × |
| | 82 | CWMeteringDiameter | ○ | ○ | × | × | × |
| | 83 | ExpBaseMatrix | ○ | ○ | × | × | × |
| | 84 | ExpBaseCenter | ○ | ○ | × | × | × |
| | 85 | ExpBaseSpot | ○ | ○ | × | × | × |
| | 86 | ExpBaseHighlight | ○ | ○ | × | × | × |
| | 87 | ShootingSpeed | ○ | ○ | × | × | × |
| | 88 | ShootingLimit | ○ | ○ | × | × | × |
| | 89 | ElectronicFrontCurtainShutter | ○ | ○ | × | × | × |
| | 90 | ExposureDelayEx | ○ | ○ | × | × | × |
| | 91 | NumberingMode | ○ | ○ | × | × | × |
| | 92 | ResetFileName | ○ | ○ | × | × | × |
| | 93 | FlashSyncTime | ○ | ○ | × | × | × |
| | 94 | FlashSlowLimit | ○ | ○ | × | × | × |
| | 95 | InternalSplMode | ○ | ○ | × | × | × |
| | 96 | BracketingVary | ○ | ○ | × | × | × |
| | 97 | BracketingFactor | ○ | ○ | × | × | × |
| | 98 | BracketingOrder | ○ | ○ | × | × | × |
| | 99 | ShutterSpeedLockSetting | ○ | ○ | × | × | × |
| | 100 | ApertureLockSetting | ○ | ○ | × | × | × |
| | 101 | ApertureDial | ○ | ○ | × | × | × |
| | 102 | ShootNoCard | ○ | ○ | × | × | × |
| | 103 | MovieReleaseButton | ○ | ○ | × | × | × |
| | 104 | UserComment | ○ | ○ | × | × | × |
| | 105 | EnableComment | ○ | ○ | × | × | × |
| | 106 | CameraInclinationMode | ○ | ○ | × | × | × |
| | 107 | ClockDateTime | × | × | × | × | × |

| Capability | | | Live view photography | Movie live view | Movie recording | SpotWB | Mirror up |
|------------|-----|--------------------------|--------------------------|--------------------|--------------------|--------|--------------|
| 3 | 108 | ManualSetLensNo | ○ | ○ | × | × | × |
| | 109 | FmmManual | ○ | ○ | × | × | × |
| | 110 | F0Manual | ○ | ○ | × | × | × |
| | 111 | EnableCopyright | ○ | ○ | × | × | × |
| | 112 | ArtistName | ○ | ○ | × | × | × |
| | 113 | CopyrightInfo | ○ | ○ | × | × | × |
| | 114 | ShutterSpeed | ○ | ○ | ○ | × | × |
| | 115 | FlexibleProgram | ○ | ○ | × | × | × |
| | 116 | FocusPreferredArea | × | × | × | × | × |
| | 117 | Aperture | ○ | ○ | ○ | × | × |
| | 118 | MeteringMode | ○ | ○ | ○ | × | × |
| | 119 | ExposureMode | ○ | ○ | × | ○ | × |
| | 120 | ExposureComp | ○ | ○ | ○ | × | × |
| | 121 | ShootingMode | ○ | ○ | ○ | ○ | × |
| | 122 | ContinuousShootingNum | ○ | ○ | ○ | × | × |
| | 123 | FocusAreaMode | × | × | × | × | × |
| | 124 | EnableBracketing | ○ | ○* | ○* | × | × |
| | 125 | AEBracketingStep | ○ | ○ | ○ | × | × |
| | 126 | WBBracketingStep | ○ | ○ | ○ | × | × |
| | 127 | BracketingType | ○ | ○ | ○ | × | × |
| | 128 | ADLBracketingType | ○ | ○ | ○ | × | × |
| | 129 | ADLBracketingStep | ○ | ○ | ○ | × | × |
| | 130 | LiverViewStatus | ○ | ○ | ○ | ○ | × |
| | 131 | LiveViewProhibit | -- | -- | -- | -- | -- |
| | 132 | LiveViewImageZoomRate | ○ | ○ | × | ○ | × |
| | 133 | CameraInclination | -- | -- | -- | -- | -- |
| | 134 | RemainContinuousShooting | -- | -- | -- | -- | -- |
| | 135 | RemainCountInMedia | -- | -- | -- | -- | -- |
| | 136 | LockExposure | -- | -- | -- | -- | -- |
| | 137 | LockFocus | -- | -- | -- | -- | -- |
| | 138 | LockFV | -- | -- | -- | -- | -- |
| | 139 | ExposureStatus | -- | -- | -- | -- | -- |
| | 140 | InfoDisplayErrStatus | -- | -- | -- | -- | -- |
| | 141 | FocalLength | -- | -- | -- | -- | -- |
| | 142 | FocusMode | -- | -- | -- | -- | -- |
| | 143 | InternalFlashStatus | -- | -- | -- | -- | -- |
| | 144 | InternalFlashComp | ○ | ○ | × | × | × |
| | 145 | BracketingCount | -- | -- | -- | -- | -- |

| Capability | | | Live view photography | Movie live view | Movie recording | SpotWB | Mirror up |
|------------|-----|--------------------------|--------------------------|--------------------|--------------------|--------|--------------|
| 3 | 146 | ExternalFlashStatus | -- | -- | -- | -- | -- |
| | 147 | ExternalFlashComp | -- | -- | -- | -- | -- |
| | 148 | ExternalFlashSort | -- | -- | -- | -- | -- |
| | 149 | ExternalNewTypeFlashMode | -- | -- | -- | -- | -- |
| | 150 | LensInfo | -- | -- | -- | -- | -- |
| | 151 | AFCapture | × | × | × | × | ○ |
| | 152 | ContrastAF | ○ | ○ | ○ | ○ | × |
| | 153 | PreCapture | × | × | × | × | × |
| | 154 | MFDriveStep | ○ | ○ | ○ | ○ | × |
| | 155 | MFDrive | ○ | ○ | ○ | ○ | × |
| | 156 | ContrastAFArea | ○ | ○ | ○ | ○ | × |
| | 157 | CaptureDustImage | × | × | × | × | × |
| | 158 | DeleteDramImage | ○ | ○ | × | ○ | × |
| | 159 | RawJpegImageStatus | -- | -- | -- | -- | -- |
| | 160 | CurrentItemID | ○ | ○ | ○ | ○ | × |
| | 161 | GetLiveViewImage | ○ | ○ | ○ | ○ | × |
| | 162 | GetVideoImage | ○ | ○ | ○ | ○ | × |
| | 163 | LockCamera | × | × | × | × | × |
| | 164 | CameraType | -- | -- | -- | -- | -- |
| | 165 | LensType | -- | -- | -- | -- | -- |
| | 166 | AFMode | ○ | ○ | × | × | × |
| | 167 | AFModeAtLiveView | ○ | ○ | ○ | ○ | × |
| | 168 | LiveViewAF | ○ | ○ | ○ | × | × |
| | 169 | MovRecInCardStatus | × | ○ | ○ | × | × |
| | 170 | MovRecInCardProhibit | -- | -- | -- | -- | -- |
| | 171 | AngleLevel | -- | -- | -- | -- | -- |
| | 172 | AngleLevelPitch | -- | -- | -- | -- | -- |
| | 173 | AngleLevelYaw | -- | -- | -- | -- | -- |
| | 174 | SaveMedia | ○ | ○ | × | × | × |
| | 175 | ActiveSlot | -- | -- | -- | -- | -- |
| | 176 | TerminateCapture | ○ | ○ | × | ○ | × |
| | 177 | BlinkingStatus | -- | -- | -- | -- | -- |
| | 178 | LiveViewExposurePreview | ○ | × | × | × | × |
| | 179 | LiveViewSelector | ○ | ○ | × | × | × |
| | 180 | LiveViewWBMode | ○ | × | × | × | × |
| | 181 | ResetWBMode | ○ | ○ | × | × | × |
| | 182 | MovieShutterSpeed | × | ○ | ○ | × | × |
| | 183 | MovieAperture | × | ○ | ○ | × | × |

| Capability | | | Live view photography | Movie live view | Movie recording | SpotWB | Mirror up |
|------------|-----|-------------------------------|--------------------------|--------------------|--------------------|--------|--------------|
| 3 | 184 | MovieSensitivity | × | ○ | ○ | × | × |
| | 185 | MovieExposureComp | × | ○ | ○ | × | × |
| | 186 | RetractableLensWarningStatus | -- | -- | -- | -- | -- |
| | 187 | MovieWindNoiseReduction | ○ | ○ | × | × | × |
| | 188 | MovieRecordingZone | ○ | ○ | × | × | × |
| | 189 | MovieISOControl | ○ | ○ | × | × | × |
| | 190 | MovieISOAutoHighLimit | ○ | ○ | × | × | × |
| | 191 | ISOControlSensitivity | -- | -- | -- | -- | -- |
| | 192 | LiveViewImageSize | ○ | ○ | × | × | × |
| | 193 | SpotWBMode | ○ | ○ | × | ○ | × |
| | 194 | SpotWBMeasure | ○ | ○ | × | ○ | × |
| | 195 | SpotWBChangeArea | ○ | ○ | × | ○ | × |
| | 196 | SpotWBResultDispEnd | ○ | ○ | × | ○ | × |
| | 197 | RawJpegTrasferStatus | ○ | ○ | ○ | ○ | × |
| | 198 | MovieMeteringMode | × | ○ | × | × | × |
| | 199 | MirrorUpCancel | ○ | ○ | × | ○ | ○ |
| | 200 | MirrorUpStatus | -- | -- | -- | -- | -- |
| | 201 | MirrorUpSReleaseShootingCount | -- | -- | -- | -- | -- |
| 4 | 1 | AsyncRate | -- | -- | -- | -- | -- |
| | 2 | ProgressProc | ○ | ○ | ○ | ○ | ○ |
| | 3 | EventProc | ○ | ○ | ○ | ○ | ○ |
| | 4 | DataProc | ○ | ○ | ○ | ○ | ○ |
| | 5 | UIRequestProc | ○ | ○ | ○ | ○ | ○ |
| | 6 | IsAlive | -- | -- | -- | -- | -- |
| | 7 | Children | ○ | ○ | ○ | ○ | ○ |
| | 8 | State | -- | -- | -- | -- | -- |
| | 9 | Name | -- | -- | -- | -- | -- |
| | 10 | Description | -- | -- | -- | -- | -- |
| | 11 | Interface | -- | -- | -- | -- | -- |
| | 12 | DataTypes | -- | -- | -- | -- | -- |
| | 13 | DateTime | -- | -- | -- | -- | -- |
| | 14 | StoredBytes | -- | -- | -- | -- | -- |
| | 15 | Eject | -- | -- | -- | -- | -- |
| | 16 | Feed | -- | -- | -- | -- | -- |
| | 17 | Capture | ○ | ○ | × | × | ○ |
| | 18 | Mode | -- | -- | -- | -- | -- |
| | 19 | Acquire | ○ | ○ | ○ | ○ | ○ |
| | 20 | Start | -- | -- | -- | -- | -- |

| Capability | | | Live view photography | Movie live view | Movie recording | SpotWB | Mirror up |
|------------|-----------------------|--|--------------------------|--------------------|--------------------|--------|--------------|
| 21 | Length | | -- | -- | -- | -- | -- |
| 22 | SampleRate | | -- | -- | -- | -- | -- |
| 23 | Stereo | | -- | -- | -- | -- | -- |
| 24 | Samples | | -- | -- | -- | -- | -- |
| 25 | Filter | | -- | -- | -- | -- | -- |
| 26 | Prescan | | -- | -- | -- | -- | -- |
| 27 | AutoFocus | | × | × | × | × | × |
| 28 | AutoFocusPt | | -- | -- | -- | -- | -- |
| 29 | Focus | | -- | -- | -- | -- | -- |
| 30 | Coords | | -- | -- | -- | -- | -- |
| 31 | Resolution | | -- | -- | -- | -- | -- |
| 32 | Preview | | -- | -- | -- | -- | -- |
| 33 | Negative | | -- | -- | -- | -- | -- |
| 34 | Bits | | -- | -- | -- | -- | -- |
| 35 | Planar | | -- | -- | -- | -- | -- |
| 36 | Lut | | -- | -- | -- | -- | -- |
| 37 | Transparency | | -- | -- | -- | -- | -- |
| 38 | Threshold | | -- | -- | -- | -- | -- |
| 39 | Pixels | | -- | -- | -- | -- | -- |
| 40 | ForceScan | | -- | -- | -- | -- | -- |
| 41 | ForcePrescan | | -- | -- | -- | -- | -- |
| 42 | ForceAutoFocus | | -- | -- | -- | -- | -- |
| 43 | NegativeDefault | | -- | -- | -- | -- | -- |
| 44 | Firmware | | -- | -- | -- | -- | -- |
| 45 | CommunicationLevel1 | | -- | -- | -- | -- | -- |
| 46 | CommunicationLevel2 | | -- | -- | -- | -- | -- |
| 47 | BatteryLevel | | -- | -- | -- | -- | -- |
| 48 | FreeBytes | | -- | -- | -- | -- | -- |
| 49 | FreeItems | | -- | -- | -- | -- | -- |
| 50 | Remove | | -- | -- | -- | -- | -- |
| 51 | FlashMode | | ○ | × | × | × | × |
| 52 | ModuleType | | -- | -- | -- | -- | -- |
| 53 | AcquireStreamStart | | -- | -- | -- | -- | -- |
| 54 | AcquireStreamStop | | -- | -- | -- | -- | -- |
| 55 | AcceptDiskAcquisition | | -- | -- | -- | -- | -- |
| 56 | Version | | -- | -- | -- | -- | -- |
| 57 | FilmFormat | | -- | -- | -- | -- | -- |
| 58 | TotalBytes | | -- | -- | -- | -- | -- |

