

# Nikon Corporation Type0023 vendor unique capabilities

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Nikon Corporation

## 1. Introduction

This document explains the vendor unique capabilities, which are used by Type0023 module (Type0023.md3, Type0023 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

Type0023 module can control Z 7, Z 7\_FU1(Z 7 firmup1) , Z 7\_FU2(Z 7 firmup2), Z 7\_FU3(Z 7 firmup3) camera.

## 3. Vendor Unique Capabilities

The vendor unique capabilities that are used by Type0023 module are described as follows.

The under line shows default value.

\* "exposure mode" in the sentence refers to the exposure mode described below

- The exposure mode set in kNkMAIDCapability\_ExposureMode
- When kNkMAIDCapability\_ExposureMode is 15: U1 (User Mode 1)", "16: U 2 (User Mode 2)" or "18: U 3 (User Mode 3)", the exposure mode set in kNkMAIDCapability\_UserMode1 ,2 ,or3.

The exposure mode is abbreviated as follows.

Program mode : P

Aperture priority : A

Speed priority : S

Manual : M

### 3.1. ImageSize

This will set the size of Jpeg/Tiff image. (Photo shooting menu)

**Capability** kNkMAIDCapability\_ImageSize  
**Object types** Source  
**ulType** kNkMAIDCapType\_Enum  
kNkMAIDArrayType\_PackedString  
**ulOperations** kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_GetArray,  
kNkMAIDCapOperation\_Set

#### Data

##### 【Basic Image size (JPEG/TIFF)】

Capability_CCDDDataMode	FX	DX	5:4	1:1	16:9
L	L(8256*5504)	L(5408*3600)	L(6880*5504)	L(5504*5504)	L(8256*4640)
M	M(6192*4128)	M(4048*2696)	M(5152*4120)	M(4128*4128)	M(6192*3480)
S	S(4128*2752)	S(2704*1800)	S(3440*2752)	S(2752*2752)	S(4128*2320)

##### 【During movie live view (JPEG/TIFF)】

During movie live view, the value of this capability will be changed as follows.

Capability_MovieScreenSize	4K	Full HD
size	3840*2160	1920*1080

The following cases, this Capability is read only.

- When Capability\_SpotWBMode is 1(ON).
- During movie live view.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.2. RawimageSize

This will set the raw size of image. (Photo shooting menu)

**Capability** kNkMAIDCapability\_RawImageSize

<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	The data definitions are the same as Capability_ImageSize.

RawImage size may change according to the state of camera settings. The data definitions are the same as Capability\_ImageSize.

The following cases, this Capability is read only.

- During movie live view..
- The value of Capability\_SpotWBMode is “1(ON)”.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.3. CompressionLevel

This will set the compression level of a picture. (Photo shooting menu)

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

RAW + JPEG Fine  
RAW + JPEG Fine\*

This capability value does not mean current setting value, but means current control value. If [+NEF (RAW)] function is applied, 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, the value of this Capability is "JPEG Fine".

- During movie live view

\*.However, when the camera setting is changed to movie live view,the menu of "Image quality" of the camera maintains the setting at the time of still image live view.

The following cases, this Capability is read only.

- During movie live view.
- The value of Capability\_SpotWBMode is 1(ON).

## Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.
CameraNotFound	If the camera is disconnected.

### 3.4. WBMode

This will set the white balance mode. (Photo shooting menu)

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

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M
- During movie file recording, and the value of Capability\_ MovieWBMode is except “Same as photo settings”.
- 

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.5. Sensitivity

This will set the sensitivity of camera (Photo 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\_EVInterval

Capability_EVInterval	
1/3 step	1/2 step
Auto, 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, 16000, 20000, 25600, Hi-0.3, Hi-0.7, Hi-1.0, Hi-2.0	Auto, LO-1, LO-0.5, 64, 72, <u>100</u> , 140, 200, 280, 400, 560, 800, 1100, 1600, 2200, 3200, 4500, 6400, 9000, 12800, 18000, 25600, Hi-0.5, Hi-1.0, Hi-2.0

During movie live view, the ISO sensitivity is controlled by Capability\_MovieSensitivity, not this capability.

The following cases, this Capability cannot set “Auto”

- When the exposure mode are setting except P, S, A, and M
- During movie file recording.

The following case, the upper value of this Capability will be limited. If the range which can be set is changed, kNkMAIDEvent\_CapChange will be issued.

- The value of ElectronicFrontCurtainShutter is 1 (Enable). (supported on only Z 7)
- The value of Capability\_LiveViewPhotoShootingMode is 1 (ON).

The following case, this Capability is read only.

- The value of Capability\_SpotWBMode is 1 (ON).

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.6. ResetMenuBank

This will reset the Photo shooting menu. (Photo shooting menu)

**Capability**      kNkMAIDCapability\_ResetMenuBank

**Object types**   Source

**ulType**            kMAIDCapType\_Process

**ulOperations**   kNkMAIDCapOperation\_Start

**Data**              None

The following cases, the ulVisibility of this capability is set to invalid and ulOperations of this capability cannot perform.

- During movie file recording..

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.



### 3.7. CompressRAWEx

This will set “NEF(RAW) recording – NEF(RAW) compression”. (Photo shooting menu)

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

The following cases, this Capability is read only.

- During live view photography and then the value of Capability\_RawImageSize is other than L.
- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.8. WB TuneAuto

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

**Capability** kNkMAIDCapability\_WBTuneAuto

**Object types** Source

**ulType** kNkMAIDCapType\_Range

**ulOperations** kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_Set

**Data** 0 to 1224step=1 (Default: 612)

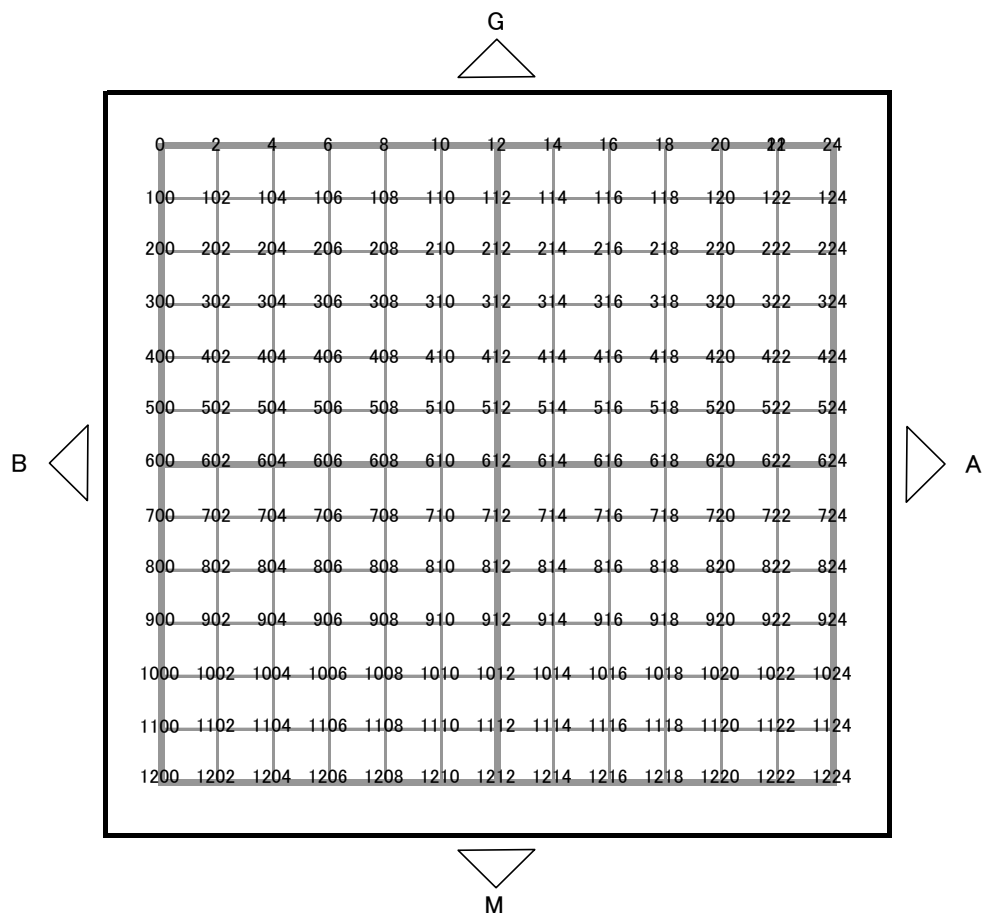
The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1 (ON).
- During movie file recording, and the value of Capability\_ MovieWBMode is except “Same as photo settings”.
- When the exposure mode are setting except P, S, A, and M.

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

A-B: 0.5step

G-M: 0.25step



## Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.9. WBAutoType

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

<b>Capability</b>	kNkMAIDCapability_WBAutoType
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
<b>Data</b>	one of eNkWBAutoType 1 : Keep warm lighting colors 2 : Keep white(reduce warm colors) <u>3: Keep atmosphere</u>

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1 (ON).
- During movie file recording, and the value of Capability\_ MovieWBMode is except “Same as photo settings”.
- When the exposure mode are setting except P, S, A, and M.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.10. WBTuneIncandescent

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

<b>Capability</b>	kNkMAIDCapability_WBTuneIncandescent
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Range
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set
<b>Data</b>	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, and the value of Capability\_ MovieWBMode is except

“Same as photo settings”.

- When the exposure mode are setting except P, S, A, and M.

### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.11. WBFluorescentType

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

<b>Capability</b>	kNkMAIDCapability_WBFluorescentType
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
<b>Data</b>	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, and the value of Capability\_ MovieWBMode is except “Same as photo settings”.
- When the exposure mode are setting except P, S, A, and M.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.12. WBTuneFluorescent

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

<b>Capability</b>	kNkMAIDCapability_WBTuneFluorescent
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Range
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set
<b>Data</b>	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, and the value of Capability\_ MovieWBMode is except “Same as photo settings”.
- When the exposure mode are setting except P, S, A, and M.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.13. WBTuneSunny

This will set the white balance adjustment when the WBMode is “Sunny”. (Photo 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, and the value of Capability\_ MovieWBMode is except “Same as photo settings”.
- When the exposure mode are setting except P, S, A, and M.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.14. WBTuneFlash

This will set the white balance adjustment when the WBMode is “Flash”. (Photo 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, and the value of Capability\_ MovieWBMode is except “Same as photo settings”.
- When the exposure mode are setting except P, S, A, and M.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
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NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.15. WBTuneShade

This will set the white balance adjustment when the WBMode is “Shade”. (Photo 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 except 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, and the value of Capability\_MovieWBMode is “Same as photo settings”.
- When the exposure mode are setting except P, S, A, and M.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.16. WB Tune Cloudy

This will set the white balance adjustment when the WBMode is “Cloudy”. (Photo 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, and the value of Capability\_ MovieWBMode is except “Same as photo settings”.
- When the exposure mode are setting except P, S, A, and M.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.17. WB Tune ColorTempEx

This will set the color temperature when the WBMode is “Color Temperature”. (Photo 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).
- During movie file recording, and the value of Capability\_ MovieWBMode is except “Same as photo settings”.
- When the exposure mode are setting except P, S, A, and M.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
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NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.18. WB Tune Color Adjust

This will set the white balance adjustment when the WBMode is “Color Temperature”. (Photo 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, and the value of Capability\_MovieWBMode is except “Same as photo settings”.
- When the exposure mode are setting except P, S, A, and M.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.19. WB Tune Natural

This will set the white balance adjustment when the WBMode is “Natural” (Photo Shooting Menu).

**Capability** kNkMAIDCapability\_MovieWB Tune Natural

**Object types** Source

**ulType** kNkMAIDCapType\_Range

**ulOperations** kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_Set

**Data** 0 to 1224 step=1 (Default: 612)

Relationship of setting the coordinates of the camera and the white balance correction value is the same as for WB Tune Auto.

The following cases, this Capability is read only.

- When Capability\_SpotWBMode is 1(ON).
- During movie file recording, and the value of Capability\_ MovieWBMode is except “Same as photo settings”.
- When the exposure mode are setting except P, S, A, and M.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.20. WBTunePreset1

This will set the white balance adjustment when the WBMode is “Preset1”.

(Photo 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 and the value of Capability\_MovieWBMode is “Same as photo settings”.
- The value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M
- The value of Capability\_WBMode is except “Preset1”.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

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### 3.21. WB TunePreset2

This will set the white balance adjustment when the WBMode is “Preset2”. (Photo 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 and the value of Capability\_MovieWBMode is “Same as photo settings”.
- The value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M
- The value of Capability\_WBMode is except “Preset2”.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.22. WBTunePreset3

This will set the white balance adjustment when the WBMode is “Preset3”.

(Photo 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 and the value of Capability\_MovieWBMode is “Same as photo settings”.
- The value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M
- The value of Capability\_WBMode is except “Preset3”.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.23. WB TunePreset4

This will set the white balance adjustment when the WBMode is “Preset4”.

(Photo 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 and the value of Capability\_MovieWBMode is “Same as photo settings”.
- The value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M
- The value of Capability\_WBMode is except “Preset4”.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.



### 3.24. WBTunePreset5

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

(Photo 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 and the value of Capability\_MovieWBMode is “Same as photo settings”.
- The value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M
- The value of Capability\_WBMode is except “Preset5”.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.25. WB TunePreset6

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

(Photo 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 and the value of Capability\_MovieWBMode is “Same as photo settings”.
- The value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M
- The value of Capability\_WBMode is except “Preset6”.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.26. WBPresetsProtect1

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

**Capability** kNkMAIDCapability\_WBPresetsProtect1

**Object types** Source

**ulType** kNkMAIDCapType\_Unsigned

**ulOperations** kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_GetDefault,  
kNkMAIDCapOperation\_Set

**Data** one of eNkMAIDWBPresetsProtect1

0: Off

1: On

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.27. WBPresetsProtect2

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

**Capability** kNkMAIDCapability\_WBPresetsProtect2

**Object types** Source

**ulType** kNkMAIDCapType\_Unsigned

**ulOperations** kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_GetDefault, kNkMAIDCapOperation\_Set

**Data** one of eNkMAIDWBPresetsProtect2

0: Off

1: On

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.28. WBPresetsProtect3

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

<b>Capability</b>	kNkMAIDCapability_WBPresetsProtect3
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDWBPresetsProtect3 <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 exposure mode are setting except P, S, A, and M

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.29. WBPresetsProtect4

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

**Capability** kNkMAIDCapability\_WBPresetsProtect4

**Object types** Source

**ulType** kNkMAIDCapType\_Unsigned

**ulOperations** kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_GetDefault,  
kNkMAIDCapOperation\_Set

**Data** one of eNkMAIDWBPresetsProtect4

0: Off

1: On

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.30. WBPresetProtect5

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

**Capability** kNkMAIDCapability\_WBPresetProtect5

**Object types** Source

**ulType** kNkMAIDCapType\_Unsigned

**ulOperations** kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_GetDefault,  
kNkMAIDCapOperation\_Set

**Data** one of eNkMAIDWBPresetProtect5

0: Off

1: On

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.31. WBPresetProtect6

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

<b>Capability</b>	kNkMAIDCapability_WBPresetProtect6
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDWBPresetProtect6 <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 exposure mode are setting except P, S, A, and M

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.



### 3.32. WBPresetNumber

This will set the preset number referenced by the Capability\_PreCapture, Capability\_WBGainRed, Capability\_WBGainBlue. (Photo shooting menu)

**Capability** kNkMAIDCapability\_WBPresetNumber

**Object types** Source

**ulType** kNkMAIDCapType\_Enum  
kNkMAIDArrayType\_PackedString

**ulOperations** kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_GetArray, kNkMAIDCapOperation\_Set

**Data** Preset 1, Preset 2, Preset 3, Preset 4, Preset5, Preset6

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.33. WBPresetCodeName

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

**Capability** kNkMAIDCapability\_WBPresetCodeName

**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.

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 ASCII code table .)

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability. If the client set to the white balance preset data with Capability_WBPresetCodeProtectX setting is On(1).
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.34. WBPresetsData

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

**Capability** kNkMAIDCapability\_WBPresetsData

**Object types** Source

**ulType** kNkMAIDCapType\_Generic

**ulOperations** kNkMAIDCapOperation\_Set

**Data** pointer to NkMAIDWBPresetsData structure  
 typedef struct tagNkMAIDWBPresetsData  
 {  
     ULONG ulPresetNumber;----- preset number  
     ULONG ulPresetGain;----- gain value  
     ULONG ulThumbnailSize;----- the thumbnail size set to “pThumbnailData”  
     ULONG ulThumbnailRotate;-- (This member is not used)  
     void\* pThumbnailData;----- the pointer to the thumbnail data to be set.}  
     NkMAIDWBPresetsData, FAR\* LPNkMAIDWBPresetsData;

When the client sends kNkMAIDCapOperation\_Set to the module, the client must to set all the member of “NkMAIDWBPresetsData” 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 “NkMAIDWBPresetsData” 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”. In addition, lower 2 bits are invalid

The both of red and blue gain value are expressed by the table below of the format fixed-point number. (e.g. 1.5 → gain value:0x0C00) The range of gain value is  $0 \leq \text{gain value} < 8$  (0x0000-0x3FFC).

ulPresetGain																
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
RGain	Integer part					Decimal part										
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
BGain	Integer part					Decimal part										

The thumbnail data set to “pThumbnailData” must be matching 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.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).

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

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability. If the ulPresetNumber with Capability_WBPresetProtectX setting is On(1).
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

#### 3.35. WBGainRed

This will get the gain red of white balance preset data selected by the Capability\_WBPresetNumber. (Photo shooting menu)

**Capability** kNkMAIDCapability\_WBGainRed

**Object types** Source

**ulType** kNkMAIDCapType\_Range

**ulOperations** kNkMAIDCapOperation\_Get

**Data** Min: 0 Max: 7. 99804 (16380/2048)  
Step: 0. 00195 (4/2048) (Default: 1)

[Regarding range of value]

Depend on the ulPresetGain format of WBPresetData, the lower 2 bits are invalid

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.36. WBGainBlue

This will get the gain blue of white balance preset data selected by the Capability\_WBPresetNumber. (Photo shooting menu)

**Capability** kNkMAIDCapability\_WBGainBlue

**Object types** Source

**ulType** kNkMAIDCapType\_Range

**ulOperations** kNkMAIDCapOperation\_Get

**Data** Min: 0 Max: 7. 99804 (16380/2048)  
Step: 0. 00195 (4/2048) (Default: 1)

[Regarding range of value]

Depend on the ulPresetGain format of WBPresetData, the lower 2 bits are invalid

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.37. CCDDataMode

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

<b>Capability</b>	kNkMAIDCapability_CCDDataMode
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
<b>Data</b>	one of eNkMAIDCCDDataMode 3: FXformat 4: DXformat 5: 5:4 8: 1:1 9: 16:9

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 following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).
- DX lens is attached to the camera.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.38. ImageColorSpace

This will set color space. (Photo shooting menu)

**Capability** kNkMAIDCapability\_ImageColorSpace  
**Object types** Source  
**ulType** kNkMAIDCapType\_Unsigned  
**ulOperations** kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_Set,  
kNkMAIDCapOperation\_GetDefault  
**Data** one of eNkMAIDImageColorSpace  
0: sRGB,  
1: AdobeRGB

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.39. IsoControl

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

**Capability** kNkMAIDCapability\_IsoControl  
**Object types** Source  
**ulType** kNkMAIDCapType\_Boolean  
**ulOperations** kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_Set, kNkMAIDCapOperation\_GetDefault  
**Data** True: used False: not used

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.40. NoiseReduction

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

**Capability** kNkMAIDCapability\_NoiseReduction  
**Object types** Source  
**ulType** kNkMAIDCapType\_Boolean  
**ulOperations** kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_Set, kNkMAIDCapOperation\_GetDefault  
**Data** True: used False: not used

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1 (ON).
- During movie file recording
- The value of Capability\_LiveViewPhotoShootingMode is 1(ON).

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.



### 3.41. NoiseReductionHighISO

This will set whether noise reduction is used or not used when high ISO.

(Photo shooting menu)

<b>Capability</b>	kNkMAIDCapability_NoiseReductionHighISO
<b>Object type</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
<b>Data</b>	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

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.42. CompressRAWBitMode

This will set bit depth for RAW(NEF). (Photo shooting menu)

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

The following cases, this Capability is read only.

- During live view photography and then the value of Capability\_RawImageSize is other than “L”.
- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.43. PictureControl

This will set Picture Control. (Photo shooting menu)

<b>Capability</b>	kNkMAIDCapability_PictureControl
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDPictureControl 1: Standard 2: Neutral 3: Vivid 4: Monochrome 5: Portrait 6: Landscape 7: Flat <u>8: Auto</u> 101: Dream 102: Morning 103: Pop 104: Sunday 105: Somber 106: Dramatic 107: Silence 108: Breached 109: Melancholic 110: Pure 111: Denim 112: Toy 113: Sepia 114: Blue 115: Red 116: Pink 117: Charcoal 118: Graphite 119: Binary 120: Carbon 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 Picture Control selected currently is changed, `kNkMAIDEvent_CapChangeValueOnly` is issued about this capability.

The following cases, this Capability is read only.

- The value of `Capability_SpotWBMode` is 1(ON).
- During movie file recording.
- When the exposure mode are setting except P, S, A, and M

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability. If the client sends <code>kNkMAIDCapOperation_Set</code> with unused Picture Control.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.44. PictureControlDataEx2

This will set the assigned Picture Control data. And this will get Picture Control data. (Photo shooting menu)

Capability	kNkMAIDCapability_PictureControlDataEx2
------------	---

Object types	Source
--------------	--------

- ulType kNkMAIDCapType\_Generic

**ulOperations**    kNkMAIDCapOperation\_Set, kNkMAIDCapOperation\_Get  
                    kNkMAIDCapOperation\_GetDefault

<b>Data</b>	pointer to NkMAIDPicCtrlData structure
-------------	--

typedef struct tagNkMAIDPicCtrlData

 $\{$ 

ULONG ulPicCtrlItem;----- The target Picture Control

ULONG ulSize;-----The size of Picture Control data (Max: 614 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 case, this Capability is read only.

- During movie file recording.

**[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”.

**[In case of Get]**

When the client sends `kNkMAIDCapOperation_Get`, the client must set the maximum Picture Control data size, 614, to "ulSize", and set the allocation space for 614 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.

※The format of Picture Control data and the available values at set is shown at “[PictureControl DataSet](#)”

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	<ul style="list-style-type: none"> <li>· If you run the Operation that it is not supported against Capability.</li> <li>· When the following all conditions will be met. <ul style="list-style-type: none"> <li>- The ulPicCtrlItem is the CustomPictureControl</li> <li>- The bModifiedFlag is true.</li> <li>- There is the defferece ulPicCtrlItem and BasePictureControl of PictureControlData</li> </ul> </li> <li>· When unusable value is set for the PictureControlData.</li> <li>· The invalid PictureControlData is specified.</li> </ul>
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

#### 3.44.1. PictureControl DataSet

PictureControl DataSet is sent in Capability\_PictureControlDataEx2 or Capability\_PictureControlDataEx2.

PictureControl DataSet indicates information about B.

Field	Size	Data
BasePictureControl	2	BasePictureControl
RegistrationName	20	RegistrationName
ApplyLevel	1	ApplyLevel
QuickSharpFlag	1	QuickSharpFlag
QuickSharp	1	QuickSharp
Sharpening	1	Sharpening
MiddleRangeSharpening	1	MiddleRangeSharpening
Clarity	1	Clarity
Contrast	1	Contrast
Brightness	1	Brightness
Saturation	1	Saturation
Hue	1	Hue
FilterEffects	1	FilterEffects
Toning	1	Toning
ToningDensity	1	ToningDensity

CustomCurveFlag	1	CustomCurveFlag
CustomCurveData	0 or 578	CustomCurveData

The values used for Sharpening, MiddleRangeSharpening, Clarity, Contrast, Brightness, Saturation, Hue and ToningDensity are shown below.

Value	Description
-128	Auto
-N	-N x 0.25
...	
-1	-0.25
0	0
1	0.25
...	
N	N x 0.25

### BasePictureControl

Indicates the type of PictureControl that is the base of the CustomPictureControl.

In the case of preinstalled PictureControl, it is indicated its PictureControl.

When the unused CustomPictureControl is got, it becomes 0

Value	Description
1	Standard
2	Neutral
3	Vivid
4	Monochrome
5	Portrait
6	Landscape
7	Flat
8	Auto
101	Dream
102	Morning
103	Pop
104	Sunday
105	Somber
106	Dramatic
107	Silence
108	Breached
109	Melancholic
110	Pure
111	Denim
112	Toy
113	Sepia
114	Blue
115	Red
116	Pink
117	Charcoal
118	Graphite
119	Binary
120	Carbon

### RegistrationName

Indicates the RegistrationName of the PictureControl.

The size is fixed at 20 bytes (ASCII: 19 bytes + NULL).

### ApplyLevel

Indicates the ApplyLevel of the PictureControl.

Value	Description
0	0
10	10
20	20
30	30
40	40
50	50
60	60
70	70
80	80

90	90
100	100

Values available for each PictureControl are shown below.

Auto	Standard Vivid Portrait Landscape Neutral Flat	Monochrome	Dream Morning Pop Sunday	Somber Dramatic Silence Breached Melancholic Pure Denim Toy	Sepia Blue Red Pink	Charcoal Graphite Binary Carbon
0			0 10 20 30 40 50 60 70 80 90 100			

### QuickSharpFlag

Indicates whether the QuickSharp of the PictureControl is ON or OFF.

When the PictureControl is set and the QuickSharpFlag is ON, the value of Sharpening, MiddleRangeSharpening and Clarity are ignored,

Value	Description
0	OFF
1	ON

### QuickSharp

Indicates the QuickSharp of the PictureControl.

Value	Description
-128	Auto
-2	-2
-1	-1
0	0
1	1
2	2

Values available for each PictureControl are shown below.

When the PictureControl is set and the QuickSharpFlag is ON, it cannot be set Auto

Auto	Standard Vivid Portrait Landscape Neutral Flat	Monochrome	Dream Morning Pop Sunday	Somber Dramatic Silence Breached Melancholic Pure Denim Toy	Sepia Blue Red Pink	Charcoal Graphite Binary Carbon
-2~2	-128 -2~2		-2~2			

### Sharpening

Indicates the Sharpening of the PictureControl.

Values available for each PictureControl are shown below.

Auto	Standard Vivid Portrait Landscape Neutral Flat	Monochrome	Dream Morning Pop Sunday	Somber Dramatic Silence Breached Melancholic Pure Denim Toy	Sepia Blue Red Pink	Charcoal Graphite Binary Carbon
-8 -4 0	-128 (When the QuickSharp is Auto) -12~36					



4	
8	

## MiddleRangeSharpening

Indicates the MiddleRangeSharpening of the PictureControl.

Values available for each PictureControl are shown below.

Auto	Standard Vivid Portrait Landscape Neutral Flat	Monochrome	Dream Morning Pop Sunday	Somber Dramatic Silence Breached Melancholic Pure Denim Toy	Sepia Blue Red Pink	Charcoal Graphite Binary Carbon
-8 -4 0 4 8	-128 (When the QuickSharp is Auto) -20~20					

## Clarity

Indicates the Clarity of the PictureControl.

Values available for each PictureControl are shown below.

Auto	Standard Vivid Portrait Landscape Neutral Flat	Monochrome	Dream Morning Pop Sunday	Somber Dramatic Silence Breached Melancholic Pure Denim Toy	Sepia Blue Red Pink	Charcoal Graphite Binary Carbon
-8 -4 0 4 8	-128 (When the QuickSharp is Auto) -20~20					

## Contrast

Indicates the Contrast of the PictureControl.

Values available for each PictureControl are shown below.

Auto	Standard Vivid Portrait Landscape Neutral Flat	Monochrome	Dream Morning Pop Sunday	Somber Dramatic Silence Breached Melancholic Pure Denim Toy	Sepia Blue Red Pink	Charcoal Graphite Binary Carbon
-8 -4 0 4 8	-128 -12~12		-12~12			

## Brightness

Indicates the Brightness of the PictureControl.

Values available for each PictureControl are shown below.

Auto	Standard Vivid Portrait Landscape Neutral Flat	Monochrome	Dream Morning Pop Sunday	Somber Dramatic Silence Breached Melancholic Pure Denim Toy	Sepia Blue Red Pink	Charcoal Graphite Binary Carbon
0	-6~6		0			

## Saturation

Indicates the Saturation of the PictureControl.

Values available for each PictureControl are shown below.

Auto	Standard Vivid Portrait Landscape Neutral Flat	Monochrome	Dream Morning Pop Sunday	Somber Dramatic Silence Breached Melancholic Pure Denim Toy	Sepia Blue Red Pink	Charcoal Graphite Binary Carbon
-8 -4 0 4 8	-128 -12~12	0	-12~12		0	

## Hue

Indicates the Hue of the PictureControl.

Values available for each PictureControl are shown below.

Auto	Standard Vivid Portrait Landscape Neutral Flat	Monochrome	Dream Morning Pop Sunday	Somber Dramatic Silence Breached Melancholic Pure Denim Toy	Sepia Blue Red Pink	Charcoal Graphite Binary Carbon
0	-12~12	0	-12~12	0		

## FilterEffects

Indicates the FilterEffects of the PictureControl.

Value	Description
0	OFF
1	Yellow
2	Orange
3	Red
4	Green

Values available for each PictureControl are shown below.

Auto	Standard Vivid Portrait Landscape Neutral Flat	Monochrome	Dream Morning Pop Sunday	Somber Dramatic Silence Breached Melancholic Pure Denim Toy	Sepia Blue Red Pink	Charcoal Graphite Binary Carbon
0	0~4		0	0~4		

## Toning

Indicates the Toning of the PictureControl.

The value of ToningDensity will be ignored when the following all conditions will be met

- When the PictureControl is setting.
- The Toning can be set.
- The value of the Toning is B&W

Value	Description
0	B&W
1	Sepia
2	Cyanotype
3	Red
4	Yellow

5	Green
6	Blue Green
7	Blue
8	Purple Blue
9	Red Purple

Values available for each PictureControl are shown below.

Auto	Standard Vivid Portrait Landscape Neutral Flat	Monochrome	Dream Morning Pop Sunday	Somber Dramatic Silence Breached Melancholic Pure Denim Toy	Sepia Blue Red Pink	Charcoal Graphite Binary Carbon
0	0~9	0	0~9	0	0~9	0~9

### ToningDensity

Indicates the ToningDensity of the PictureControl.

Values available for each PictureControl are shown below.

Auto	Standard Vivid Portrait Landscape Neutral Flat	Monochrome	Dream Morning Pop Sunday	Somber Dramatic Silence Breached Melancholic Pure Denim Toy	Sepia Blue Red Pink	Charcoal Graphite Binary Carbon
0	0~28	0	0~28	0	0~28	0~28

### CustomCurveFlag

Indicates whether the CustomCurveFlag of the PictureControl is ON or OFF.

In case of the only CustomPictureControl,it can set ON

Value	Description
0	OFF
1	ON

### CustomCurveData

Indicates the CustomCurveData of the PictureControl.

The CustomCurveData use LUT data(refer to LUT format).

When the CustomCurveFlag is OFF, this data is not used.

#### LUT format

For the LUT data, the 64-byte header to be used for the host is added to the 514-byte (2 byte x 257 point) actual data. The header format is specified by the host individually (storage position of the spline point of the LUT to be sent, etc., data to reproduce the LUT when reading is performed), and the camera does not care the contents. However, because the two bytes of the header are used for the camera to decide whether the header data is present or not, the data needs to be set in the header.

Byte	contents
0 ~ 63	Lut Header
64,65	Data0
66,67	Data1
...	...
576,577	Data256

[LUT header format]

As an example of Lut Header, the contents of the header set by the Nikon application are shown below.

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

### 3.45. **GetPicCtrlInfo**

Not supported.

### 3.46. DeleteCustomPictureControl

This will delete Custom Picture Control. (Photo 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 can not set.

- During movie file recording.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.47. Active\_D\_Lighting

This will set Active D-Lighting. (Photo 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.

- The value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.
- When the exposure mode are setting except P, S, A, and M

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.48. ISOAutoShutterTime

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

**Capability** kNkMAIDCapability\_ISOAutoShutterTime

**Object types** Source

**ulType** kNkMAIDCapType\_Unsigned

**ulOperations** kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_GetDefault, kNkMAIDCapOperation\_Set

**Data** one of eNkMAIDISOAutoShutterTime

Threshold	eNkMAIDISOAutoShutterTime	Threshold	eNkMAIDISOAutoShutterTime
1/4000	20	1/8	4
1/3200	21	1/6	37
1/2500	22	1/5	38
1/2000	23	1/4	5
1/1600	24	1/3	39
1/1250	25	1/2.5	40
1/1000	26	1/2	6
1/800	27	1/1.6	41
1/640	28	1/1.3	42
1/500	29	1	7
1/400	30	1.3	43
1/320	31	1.6	44
1/250	13	2	8
1/200	14	2.5	45
1/160	15	3	46
1/125	0	4	9
1/100	16	5	47
1/80	17	6	48
1/60	1	8	10
1/50	19	10	49
1/40	18	13	50
1/30	2	15	11
1/25	33	20	51
1/20	34	25	52
1/15	3	30	12
1/13	35	Auto	32
1/10	36		



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 exposure mode are setting except P, S, A, and M

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.49. ISOAutoShutterTimeAutoValue

This will set compensation value when the value of kNkMAIDCapability\_ISOAutoShutterTime is 32(Auto). (Photo 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\_ISOAutoShutterTime 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 exposure mode are setting except P, S, A, and M

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.50. ISOAutoHiLimit

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

**Capability** kNkMAIDCapability\_ISOAutoHiLimit

**Object types** Source

**ulType** kNkMAIDCapType\_Unsigned

**ulOperations** kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_GetDefault, kNkMAIDCapOperation\_Set

**Data** one of eNkMAIDISOAutoHiLimit4

The actually assignable value changes by setting Capability\_EVInterval and the assignable values follows a value of Capability\_Sensitivity.

eNkMAIDISOAutoHiLimit4	ISO	EVInterval	
		1/3	1/2
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	12800	○	○
36	16000	○	×
37	18000	×	○
38	20000	○	×
39	25600	○	○
31	Hi-0.3	○	×
32	Hi-0.5	×	○
33	Hi-0.7	○	×

34	Hi-1.0	○	○
35	Hi-2.0	○	○

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 exposure mode are setting except P, S, A, and M

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability. If the value that cannot set is set to this capability according to the EVInterval setting.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.51. VignetteControl

This will set the Vignette control. (Photo shooting menu)

<b>Capability</b>	kNkMAIDCapability_VignetteControl
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set
<b>Data</b>	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.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.52. MovieScreenSize

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

**Capability** kNkMAIDCapability\_MovieScreenSize

**Object types** Source

**ulType** kNkMAIDCapType\_Unsigned

**ulOperations** kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_GetDefault, kNkMAIDCapOperation\_Set

**Data** one of eNkMAIDMovieScreenSize8

eNkMAIDMovieScreenSize8	size
0	3840×2160 30p
1	3840×2160 25p
2	3840×2160 24p
18	1920×1080 120p
19	1920×1080 100p
<u>3</u>	<u>1920×1080 60p</u>
4	1920×1080 50p
5	1920×1080 30p
6	1920×1080 25p
7	1920×1080 24p
15	1920×1080 30p x4(slow-mo)
16	1920×1080 25p x4(slow-mo)
17	1920×1080 24p x5(slow-mo)

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	•If you run the Operation that it is not supported against Capability. •During saving movie frame.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.53. MovieImageQuality

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

**Capability** kNkMAIDCapability\_MovieImageQuality  
**Object types** Source  
**ulType** kNkMAIDCapType\_Unsigned  
**ulOperations** kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_GetDefault, kNkMAIDCapOperation\_Set  
**Data** one of eNkMAIDMovieImageQuality  
0: Normal  
1: High quality

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.
- The value of Capability\_MovieScreenSize is “0: 3840 × 2160 30 p”, “1: 3840 × 2160 25 p”, “2: 3840 × 2160 24 p”, “15 : 1920x1080 30p x4(slow-mo)”, “16 : 1920x1080 25p x4(slow-mo)”, “17 : 1920x1080 24p x5(slow-mo)”, “18 : 1920x1080 120p” or “19 : 1920x1080 100p”.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.54. MovieRecMicrophone

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

<b>Capability</b>	kNkMAIDCapability_MovieRecMicrophone
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set
<b>Data</b>	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 and when the value of this capability is “4(Microphone off)”.
- The value of Capability\_ MovieScreenSize is “15 : 1920x1080 30p x4(slow-mo)”, “16 : 1920x1080 25p x4(slow-mo)” or “17 : 1920x1080 24p x5(slow-mo)”,

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability. If this capability is set “4: Microphone off” when during movie file recording and the value of this capability is “0: Auto sensitivity” or “5: Manual sensitivity”.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.55. MovieRecMicrophoneValue

This will set the microphone sensitivity when Capability\_MovieRecMicrophone is manual sensitivity. (Movie 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).
- The value of Capability\_MovieScreenSize is “15 : 1920x1080 30p x4(slow-mo)”, “16 : 1920x1080 25p x4(slow-mo)” or “17 : 1920x1080 24p x5(slow-mo)”,

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.56. AutoDistortion

This will set the“Auto distortion control”. (Photo shooting menu)

**Capability** kNkMAIDCapability\_AutoDistortion  
**Object types** Source  
**ulType** kNkMAIDCapType\_Unsigned  
**ulOperations** kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_GetDefault, kNkMAIDCapOperation\_Set  
**Data** one of eNkMAIDAutoDistortion  
0: Off  
1: On

The following cases, this Capability is read only.

- When Capability\_LensType indicates 0x00000080(Always correct distortion)
- During movie file recording.
- When the value of Capability\_SpotWBMode is 1(ON).

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.



DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.57. UserMode1

This will get the exposure mode set up for " U1(User Mode1)".

**Capability**            kNkMAIDCapability\_UserMode1  
**Object types**        Source  
**ulType**                kNkMAIDCapType\_Unsigned  
**ulOperations**        kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_GetDefault,  
**Data**                  one of eNkMAIDUserMode  
                            19 : P (Program mode)  
                            20 : S (Speed priority)  
                            21 : A (Aperture priority)  
                            22 : M (Manual)  
                            23 : Auto

This Capability is used when the value of kNkMAIDCapability\_ExposureMode is 15(U1).

When the value of kNkMAIDCapability\_ExposureMode is not 15(U1),the value of this Capability is not guaranteed.

Registering and resetting U1 can do by only the camera operation

### 3.58. UserMode2

This will get the exposure mode set up for " U2(User Mode2)".

**Capability**            kNkMAIDCapability\_UserMode2  
**Object types**        Source  
**ulType**                kNkMAIDCapType\_Unsigned  
**ulOperations**        kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_GetDefault,  
**Data**                  one of eNkMAIDUserMode  
                            19 : P (Program mode)  
                            20 : S (Speed priority)  
                            21 : A (Aperture priority)  
                            22 : M (Manual)  
                            23 : Auto

This Capability is used when the value of kNkMAIDCapability\_ExposureMode is 16(U2).

When the value of kNkMAIDCapability\_ExposureMode is not 16(U2),the value of this Capability is not guaranteed.

Registering and resetting U2 can do by only the camera operation

### 3.59. UserMode3

This will get the exposure mode set up for " U3(User Mode3)".

<b>Capability</b>	kNkMAIDCapability_UserMode3
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault,
<b>Data</b>	one of eNkMAIDUserMode <u>19 : P (Program mode)</u> 20 : S (Speed priority) 21 : A (Aperture priority) 22 : M (Manual) 23 : Auto

This Capability is used when the value of kNkMAIDCapability\_ExposureMode is 18(U3).

When the value of kNkMAIDCapability\_ExposureMode is not 18(U3),the value of this Capability is not guaranteed.

Registering and resetting U3 can do by only the camera operation

### 3.60. HDRMode

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

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

When the Capability\_ShootingMode is continuous shooting, 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.
- When the exposure mode are setting except P, S, A, and M..
- The value of Capability\_SpotWBMode is 1(ON).
- During movie live view.

## Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.61. HDRExposure

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

<b>Capability</b>	kNkMAIDCapability_HDRExposure
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set
<b>Data</b>	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\_EnableBracketing is ON.
- The value of Capability\_CompressionLevel is RAW or RAW+ JPEG.
- When the exposure mode are setting except P, S, A, and M..
- The value of Capability\_SpotWBMode is 1(ON).
- During movie live view.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.62. HDRSmoothing

This will set “HDR(high dynamic range) – Smoothing”. (Photo shooting menu)

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

The following cases, this Capability is read only.

- The value of Capability\_EnableBracketing is ON.
- The value of Capability\_CompressionLevel is RAW or RAW+ JPEG.
- When the exposure mode are setting except P, S, A, and M..
- The value of Capability\_SpotWBMode is 1(ON).
- During movie live view.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.63. HDRSaveIndividualImages

This will set “HDR(high dynamic range) - Save individual images(NEF)” of Photo Shooting Menu.

<b>Capability</b>	kNkMAIDCapability_HDRSaveIndividualImages
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDHDRSaveIndividualImages <u>0: OFF</u> 1: ON

The following cases, this Capability is read only.

- When Capability\_EnableBracketing is ON
- When Capability\_CompressionLevel is RAW or RAW + JPEG.
- When the exposure mode are setting except P, S, A, and M..
- The value of Capability\_SpotWBMode is 1(ON).
- During movie live view.

### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.64. FlashISOAutoHighLimit

This will set the Photo shooting menu, “ISO sensitivity settings – Auto ISO sensitivity control - Maximum sensitivity with flash”. (Photo shooting menu)

**Capability** kNkMAIDCapability\_FlashISOAutoHighLimit

**Object types** Source

**ulType** kNkMAIDCapType\_Unsigned

**ulOperations** kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_Set,  
kNkMAIDCapOperation\_GetDefault

**Data** one of eNkMAIDFlashISOAutoHighLimit

The value which can be set up by setup of Capability\_EVInterval changes.

eNkMAIDFlashISOAutoHighLimit	Maximum sensitivity	EVInterval	
		1/3	1/2
48	100	○	○
49	125	○	×
50	140	×	○
51	160	○	×
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	12800	○	○
25	16000	○	×
26	18000	×	○
27	20000	○	×
28	25600	○	○
37	Hi-0.3	○	×
38	Hi-0.5	×	○
39	Hi-0.7	○	×
40	Hi-1.0	○	○
41	Hi-2.0	○	○
45	Same as without flash		

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.
- The value of Capability\_IsoControl is OFF.
- When the exposure mode are setting except P, S, A, and M

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability. If the value that cannot set is set to this capability according to the EVInterval setting.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.



3.65.   **ResetCustomSetting**

This will reset the custom settings, which is selected by Capability\_CustomSettings. (Custom setting menu)

- Capability**           kNkMAIDCapability\_ResetCustomSetting
- Object types**       Source
- ulType**             kNkMAIDCapType\_Process
- ulOperations**       kNkMAIDCapOperation\_Start
- Data**               None

The following cases, the ulVisibility of this capability is set to invalid and ulOperations of this capability cannot perform.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).

**Result Codes**

NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.66.    **AFcPriority**

    This will set the continuous AF area priority. (Custom setting 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”

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.67. **AFsPriority**

This will set the single AF area priority. (Custom setting 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.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.68. AFLockOnAcross

This will set “Focus tracking with lock-on – Blocked shot AF response”. (Custom setting menu a3)

<b>Capability</b>	kNkMAIDCapability_AFLockOnAcross
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
<b>Data</b>	one of eNkMAIDAFLockOnAcross 1(Quick)~5(Delayed) Default:3

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.69. FaceDetection

[Z 7] This will set “Auto-area AF face detection”.

[Z 7\_FU1, Z 7\_FU2, Z 7\_FU3] This will set “Auto-area AF face/eye detection”.

(Custom setting menu a4)

<b>Capability</b>	kNkMAIDCapability_FaceDetection
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDault, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDFaceDetection [Z 7] 0: OFF <u>1: ON</u> [Z 7_FU1, Z 7_FU2] 0: OFF 1: Face detection on <u>2: Face and eye detection on</u>

### **[Z 7 FU3]**

0: OFF

1: Face detection on

2: Face and eye detection on

3: Animal detection on

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).

#### **Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### **3.70. AFAreaSelector**

This will set that AF area selector motion is circular or not. (Custom setting menu a9 )

**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.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).

#### **Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.71. AFAreaPoint

This will set “Focus points used”. (Custom setting menu a5)

<b>Capability</b>	kNkMAIDCapability_AFAreaPoint
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
<b>Data</b>	one of eNkMAIDAFAreaPoint <u>5: All points</u> 6: Every other point

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.72. EVInterval

This will set the EV interval of the Capability\_ShutterSpeed, Capability\_Aperture, Capability\_FlexibleProgram, and Capability\_AEBracketingStep. (Custom setting menu b1 )

<b>Capability</b>	kNkMAIDCapability_EVInterval
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	

<u>1/3step</u>	“1/3 Step”
1/2step	“1/2 Step”

When this capability is changed and Capability\_BracketingVary is AE bracketing, the following things will be occurred.

- Capability\_AEBracketingStep is set to 3(1 EV).
- Capability\_BracketingType is set to 8(None).

.

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.73. CWMeteringDiameter

This will set the center weighted metering diameter. (Custom setting menu b3 )

**Capability**            kNkMAIDCapability\_CWMeteringDiameter

**Object types**        Source

**ulType**                kNkMAIDCapType\_Enum  
                            kNkMAIDArrayType\_PackedString

**ulOperations**        kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_GetArray,  
                            kNkMAIDCapOperation\_Set

Data

Average	“Average”
<u>φ12mm</u>	“12 mm”

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M

Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.



### 3.74. ExpBaseMatrix

This will set the exposure base when the metering mode is matrix. (Custom setting menu b4)

**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.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.75. ExpBaseCenter

This will set the exposure base when the metering mode is center weighted. (Custom setting menu b4)

**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.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.76. ExpBaseSpot

This will set the exposure base when the metering mode is spot. (Custom setting menu b4)

**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.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.77. **ExpBaseHighlight**

This will set the exposure base when the metering mode is highlight-weighted metering. (Custom setting menu b4)

**Capability**            kNkMAIDCapability\_ExpBaseHighlight  
**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.

#### **Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.78.    **ShootingSpeedHigh**

    This will set frame rate for continuous highlow-speed(CH). (Custom setting menu d1)

- Capability**            kNkMAIDCapability\_ShootingSpeedHigh
- Object types**        Source
- ulType**                kNkMAIDCapType\_Enum  
                            kNkMAIDArrayType\_PackedString
- ulOperations**        kNkMAIDCapOperation\_Get.\_kNkMAIDCapOperation\_GetArray.  
                            kNkMAIDCapOperation\_Set

**Data**

<u>5 fps</u>	“5 frames / second”
4 fps	“4 frames / second”
3 fps	“3 frames / second”
2 fps	“2 frames / second”
1 fps	“1 frame / second”

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.79. ShootingLimit

This will set shooting limit number in continuous shooting. (Custom setting menu d2)

**Capability** kNkMAIDCapability\_ShootingLimit

**Object types** Source

**ulType** kNkMAIDCapType\_Range

**ulOperations** kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_Set

**Data** 1 - 200 (Default:200)

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.80. ExposureDelayEx

This will set exposure delay mode. (Custom setting menu d4)

<b>Capability</b>	kNkMAIDCapability_ExposureDelayEx
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
<b>Data</b>	one of eNkMAIDExposureDelayEx 0:3 sec 1:2 sec 2:1 sec <u>3: Off</u> 4:0.5 sec 5:0.2 sec

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.81.   **NumberingMode**

    This will set a Numbering Mode. (Custom setting menu d7)

**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 Capabilty\_HDRMode is except “Off”.

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.82.   **ResetFileNumber**

    This resets the number of the file, which will be stored in CF/XQDcard. (Custom setting menu d7)

<b>Capability</b>	kNkMAIDCapability_ResetFileNumber
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Process
<b>ulOperations</b>	kNkMAIDCapOperation_Start
<b>Data</b>	None

    The following cases, the ulVisibility of this capability is set to invalid and ulOperations of this capability cannot perform.

- The value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.
- When the value of Capabilty\_HDRMode is except “Off”.

**Result Codes**

NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.



3.83. **FlashSyncTime**

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

**Capability**            kNkMAIDCapability\_FlashSyncTime

**Object types**        Source

**ulType**                kNkMAIDCapType\_Enum  
                          kNkMAIDArrayType\_PackedString

**ulOperations**        kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_GetArray,  
                          kNkMAIDCapOperation\_Set

**Data**

1/200 sec(FP Auto)	“1/200 sec (FP Auto)”
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.

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.84. **FlashSlowLimit**

This will set the lowest shutter speed on shooting with speedlight. (Custom setting 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 exposure mode are setting except P, S, A, and M

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.85. ExposureCompFlashUsed

This will set “CUSTUM SETTING MENU – e. Bracketing/flash – e3.Exposure comp. for flash”.  
(Custom setting menu e3)

<b>Capability</b>	kNkMAIDCapability_ExposureCompFlashUsed
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
<b>Data</b>	one of eNkMAIDExposureCompFlashUsed

<u>0 : Entire frame</u>
1 : Background only

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.
- When the exposure mode are setting except P, S, A, and M

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.86. BracketingVary

This will set "Auto bracketing - Auto bracketing set" (Photo Shooting Menu).

**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 &amp; 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 exposure mode are setting except P, S, A, and M

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.87. BracketingFactor

This will set the bracketing variation on manual mode. (Custom setting menu e6)

**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 exposure mode are setting except P, S, A, and M

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.88. BracketingOrder

This will set the bracketing order. (Custom setting menu e7)

**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 exposure mode are setting except P, S, A, and M

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.89. ShutterSpeedLockSetting

This will set the function of ShutterSpeed lock. (Custom setting menu f4)

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

The following cases, this Capability is read only.

- The exposure mode are except “Speed priority” and “Manual”.
- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).
- When the lens that is failed to firm up is attached..
- Under warning of the shutter speed or the aperture value display

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	<ul style="list-style-type: none"><li>• If you run the Operation that it is not supported against Capability.</li><li>• On the card unformatted error.</li></ul>
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.90. ApertureLockSetting

This will set the function of Aperture lock. (Custom setting menu f4)

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

The following cases, this Capability is read only.

- The exposure mode are except S, A, and M..
- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).
- When the lens that is failed to firm up is attached.
- Under warning of the shutter speed or the aperture value display.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	<ul style="list-style-type: none"><li>• If you run the Operation that it is not supported against Capability.</li><li>• On the card access error.</li><li>• On the card unformatted error.</li></ul>
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.



3.91. **MovieReleaseButton**

This will set the function assigned for shutter button during movie live view. (Custom setting menu g2)

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.

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.92. SBWirelessMode

This will set wireless flash options.

<b>Capability</b>	kNkMAIDCapability_SBWirelessMode
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDSBWirelessMode <u>0 : Off</u> 1 : Radio AWL 2 : Optical AWL 3 : Optical + Radio AWL

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- During movie live view.
- When the not supported external flash is attached to the camera.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.93. SBWirelessMultipleFlashMode

This will set remote flash control.

<b>Capability</b>	kNkMAIDCapability_SBWirelessMultipleFlashMode
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDSBWirelessMultipleFlashMode <u>0 : Group flash</u> 1 : Quick wireless control 2 : Remote repeating

When the value of Capability\_SBWirelessMode is [3:Optical + Radio AWL], the value of this capability is set to [0:Group flash].

By the flash type attached to camera or the existence of wireless communication accessory, when there is no supported value, the current value of the Capability is set to default. And in order to show the indefinite state, Visibility is set to Invalid and operation is set to read only.

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- During movie live view.
- The value of Capability\_SBWirelessMode is [0: Off].
- When the not supported external flash is attached to the camera.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.94. SBUsableGroup

This will get the available group of the external flash.

<b>Capability</b>	kNkMAIDCapability_SBUstableGroup
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault
<b>Data</b>	one of eNkMAIDSBUstableGroup <u>0 : Use prohibited</u> or the logical disjunction of <u>eNkMAIDSBGroupID</u> .

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.95. WirelessCLSEntryMode

This will set “Remote (WR) setting – Link mode” (SETUP).

<b>Capability</b>	kNkMAIDCapability_WirelessCLSEntryMode
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDWirelessCLSEntryMode <u>0 : Pairing</u> 1 : PIN

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.
- The attached wireless remote controller doesn't support the radio-controlled AWL.
- The wireless remote controller is not attached.
- When the not supported external flash is attached to the camera.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.

UnexpectedError	By the unexpected error, if it fails to execute the command.
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### 3.96. SBPINCode

This will set “Wireless remote (WR) options – Link mode - PIN”. (SETUP)

<b>Capability</b>	kNkMAIDCapability_SBPINCode
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDault, kNkMAIDCapOperation_Set
<b>Data</b>	0 ~ 9999(Defalut:0)

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).
- The attached wireless remote controller doesn't support the radio-controlled AWL.
- The wireless remote controller is not attached.
- When the not supported external flash is attached to the camera.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.97. RadioMultipleFlashChannel

This will get the communication channel of the wireless remote controller.

<b>Capability</b>	kNkMAIDCapability_RadioMultipleFlashChannel
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDault,
<b>Data</b>	one of eNkMAIDRadioMultipleFlashChannel <u>0 : Unknown</u> 5 : 5CH 10 : 10CH 15 : 15CH

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.98. OpticalMultipleFlashChannel

This will get the channel of the optical communication to the external flash.

<b>Capability</b>	kNkMAIDCapability_OpticalMultipleFlashChannel
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDOpticalMultipleFlashChannel <u>1 : 1CH</u> 2 : 2CH 3 : 3CH 4 : 4CH

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- The value of Capability\_SBWirelessMode is “0:Off” or “1 : Radio AWL”.
- When the not supported external flash is attached to the camera.

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

- The value of this capability is undefined.
- During movie live view

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability. If the control possible flash is not attached
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.99. **FlashRangeDisplay**

This will get the unit of distance for the setting of the external flash.

**Capability**            kNkMAIDCapability\_FlashRangeDisplay  
**ulType**                kNkMAIDCapType\_Enum  
                          kNkMAIDArrayType\_Unsigned  
**ulOperations**        kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_GetArray,  
**Data**                  one of eNkMAIDFlashRangeDisplay  
                          0 : Meter(m)  
                          1 : feet(ft)

#### **Result Codes**

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.100. **AllTestFiringDisable**

It represents a prohibition state of external flash all test firing.

**Capability**            kNkMAIDCapability\_AllTestFiringDisable  
**Object types**        Source  
**ulType**                kNkMAIDCapType\_Unsigned  
**ulOperations**        kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_GetDault,  
**Data**                  one of eNkMAIDAllTestFiringDisable  
                          0 : Flash permit  
                          1 : Flash off

#### **Result Codes**

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.101. SBSettingMemberLock

This will get the locked status of the external flash setting member.

<b>Capability</b>	kNkMAIDCapability_SBSettingMemberLock
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDSBSSettingMemberLock <u>0 : unlock</u> 1 : lock

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- The value of Capability\_ExternalFlashStatus is [2: Not Exist].
- When the not supported external flash is attached to the camera.
- During movie live view.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.



### 3.102. ShootNoCard

This will set “SETUP MENU – Slot empty release lock”. (SETUP)

**Capability**            kNkMAIDCapability\_ShootNoCard

**Object types**        Source

**ulType**                kNkMAIDCapType\_Boolean

**ulOperations**        kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_Set  
                          kNkMAIDCapOperation\_GetDefault

**Data**                 True: OK            False: Lock

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.103. 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. (refer to the ASCII code table.)

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

#### Result Codes

ValueOutOfBounds	If an invalid character has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.104. 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     False: Disable

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.105. 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 case, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.106. 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 - 19 (Default : 0)

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

When the current value changes, kNkMAIDEvent\_CapChange and kNkMAIDEvent\_CapChangeValueOnly of this Capability are not issued. kNkMAIDEvent\_ManualSettingLensDataChanged is issued instead

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.107. 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 current value changes, kNkMAIDEvent\_CapChange and  
kNkMAIDEvent\_CapChangeValueOnly of this Capability are not issued.  
kNkMAIDEvent\_ManualSettingLensDataChanged is issued instead

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.108. **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 current value changes, kNkMAIDEvent\_CapChange and  
kNkMAIDEvent\_CapChangeValueOnly of this Capability are not issued.  
kNkMAIDEvent\_ManualSettingLensDataChanged is issued instead

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.109. 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      False: none

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.110. **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 95 characters. (refer to the ASCII code table.)

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

**Result Codes**

ValueOutOfBounds	If an invalid character has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.111. 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 '¥0'

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

The character, which can be included in the string, is only an ASCII 95 characters. (refer to the ASCII code table.)

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

Result Codes

ValueOutOfBounds	If an invalid character has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.



3.112. **ShutterSpeed**

This will set the shutter speed.

<b>Capability</b>	kNkMAIDCapability_ShutterSpeed
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	Strings of shutter time in second. (e.g.) "30", ... "1", "1/1.3", "1/1.6", ... "1/4000" "x 1//200", "x 1/160", "x 1/125",... "x 1/60" (Default : Minimum value of setting range)

Capability\_MovieShutterSpeed is used for during movie live view, during movie file recording.  
Capability\_ShutterSpeed is used for taking photos, during live view photography.

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.

In addition, both of the following exposure modes and flash modes are satisfied, the minimum shutter speed value is limited to the Capability\_FlashSlowLimit setting.

Flash mode	Exposure mode
Red-eye reduction	P
Fill flash	A

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

- The exposure mode is except "Manual".
- The value of Capability\_HDRMode is except "Off".

When the current value is "bulb", the above condition is met, and when "bulb" is not included in the enumeration, the current value is changed to the slowest shutter speed.

After that, when the above condition is canceled and the "bulb" is included in the enumeration, the current value holds the changed value.

The following cases, this minimum value is limited to 1/2000.

- [Z 7] The value of Capability\_ElectronicFrontCurtainShutter is 1(Enable).
- [Z 7\_FU1] The value of Capability\_ElectronicFrontCurtainShutter is 1(Electronic front-curtain shutter).
- [Z 7\_FU2、Z 7\_FU3] The value of Capability\_ElectronicFrontCurtainShutterEx is 1(Electronic front-curtain shutter).

The following cases, this capability is read only.

- The exposure mode is except “Manual”, or “Speed priority”
- The value of Capability\_ShutterSpeedLockSetting is “1(On)”.
- The value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode is “Manual”, the value of Capability\_EnableBracketing is “ON”, the value of Capability\_BracketingVary is “AE only”, or “AE & Flash”, and “TTL control” is contained in the value of Capability\_BracketingFactor.  
\*However, even when Capability\_EnableBracketing is OFF, it may be read only. See EnableBracketing for details.
- The value of Capability\_RetractableLensWarningStatus is “True”.
- The value of Capability\_ExposureMode is other than Manual and the CPU lens does not attached.
- During movie file recording.

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

- When sequence error has occurred.
- Aperture ring is not minimum.

### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.113. 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, the exposure mode 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 exposure mode 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).

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.114. Aperture

This will set the aperture.

<b>Capability</b>	kNkMAIDCapability_Aperture
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	String of F value (e.g.) “1.4”, “1.6”, “1.8”, “2”... (Default : Minimum value of setting range)

Capability\_MovieAperture is used for during movie live view, during movie file recording. Capability\_Aperture is used for taking photos, during live view photography.

When the aperture value is an integer, the decimal point is not included in the string. When aperture is not set to minimum(FEE), the string of “EE” is set.

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, Aperture value error)
  - When the CPU lens is not attached.
  - When the exposure mode are except “A” and “M”.
  - When the value of Capabilty\_ApertureLockMode is set to “1(On)”.
  - When the value of Capabilty\_RetractableLensWarningStatus is “True”.
  - When the value of Capabilty\_SpotWBMode is “1(On)”.
  - When the exposure mode is “Manual”, the value of Capabilty\_EnableBracketing is “ON”, the value of Capabilty\_BracketingVary is “AE only”, or “AE & Flash”, and “TTL control” is contained in the value of Capability\_BracketingFactor.
- \*However, even when Capability\_EnableBracketing is OFF, it may be read only. See EnableBracketing for details.

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

- When sequence error has occurred.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.115. MeteringMode

This will get the metering mode.

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

The following cases, this Capability is read only

- The value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.
- The value of Capability\_LockExposure is True: Lock.

The following case, this Capability is read only.

- When the exposure mode is setting except P, S, A, and M

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.116. ExposureMode

This will select the exposure mode.

<b>Capability</b>	kNkMAIDCapability_ExposureMode
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDExposureMode <u>0: Program mode</u> 1: Aperture priority 2: Speed priority 3: Manual 5: Auto 15: U1(UserMode1) 16: U2(UserMode2) 18: U3(UserMode3)

If the exposure mode is setting “15: U1(User Mode1)”, “16: U2(User Mode2)” or “17: U3(User Mode3)”, the exposure mode set in Capability\_UserMode1, Capability\_UserMode2 or Capability\_UserMode3 will be used.

The following case, the array data includes only P, S, A, and M..

- When the value of Capability\_SpotWBMode is 1(ON).

The following cases, this Capability is read only.

- During movie file recording.
- When the Capability\_LockCamera is “False:Unlock(PC-camera mode).”

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.117. 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\_EVInterval.

Capability\_MovieExposureComp is used for exposure compensation setting during movie live view.

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode is “Auto”

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.118. ShootingMode

This will set the shooting mode.

<b>Capability</b>	kNkMAIDCapability_ShootingMode
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDShootingMode

0: <u>Single</u>
1: Continuous L
2: Continuous H
3: Self-Timer
11: Continuous H(extended)

The following case, only "0: Single" and "2: Continuous H" are enumerated.

- During movie file recording.

The following cases, the number of shots and HDR effective is only one.

- When the value of this Capability is 1: Continuous L and when the value of Capability HDRMode is except "Off".
- When the value of this Capability is 2: Continuous H and when the value of Capability HDRMode is except "Off".
- When the value of this Capability is 11: Continuous H(extended) and when the value of Capability HDRMode is except "Off".

The following case, this Capability is read only.

- During movie live view and the value of Capability\_MovieReleaseButton is 1( Record movies).
- During movie file recording.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.



### 3.119. 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 – 65535 (Default 65535)

The following case, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.120. FocusAreaMode

This will set the AF area mode(Photo Shooting Menu).

**Capability** kNkMAIDCapability\_FocusAreaMode

**Object types** Source

**ulType** kNkMAIDCapType\_Enum

kNkMAIDArrayType\_PackedString

**ulOperations** kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_GetArray,  
kNkMAIDCapOperation\_Set

#### Data

Menu	String	Capability_AFModeAtLiveView
Dynamic AF	“Dynamic”	AF-C
Single <u>AF</u>	“Single”	MF, AF-S, AF-C
<u>Auto-areaAF</u>	“Auto”	AF-S, AF-C
Pinpoint AF	“Pinpoint”	AF-S
Wide-area AF(S)	“Wide(S)”	AF-S, AF-C
Wide-area AF(L)	“Wide(L)”	AF-S, AF-C

In the case of the AF area mode which can not be set / used depending on the value of Capability\_AFModeAtLiveView, this capability will become Single AF.

The value of this Capability is not the setting value of the menu but the control value.

※Regarding Enum Value: A value included in the enum value can be set as one of menu value. However it may not be controlled by the state of the camera in the set value. In this case, immediately after setting this capability value, CapChange is issued. The value gotten by kNkMAIDCapOperation\_Get becomes the control value.( The value of this Capability may not match the value of the menu.)

The following cases, this Capability is read only

- When the value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.
- When Capability\_AFModeAtLiveView is set to MF by user operation.
  1. Change Capability\_AFModeAtLiveView by using module
  2. Change FocusMode from photo shooting menu of the camera
  3. Change FocusMode from i-menu of the camera

during live view photography.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability. If the CPU lens does not attached.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.121. EnableBracketing

This will set whether bracketing is applied or not.

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

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

- When the value of Capability\_BracketingVary are except “White Balance” and “ADL bracketing”, the value of Capability\_EVInterval is changed.

The following cases, this Capability is read only

- When the value of Capability\_HDRMode is except “OFF”.
- When the value of Capability\_LiveViewPhotoShootingMode is 1(ON) and the value of Capability\_BracketingVary is “Flash Only”
- The value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M.
- During movie file recording.

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

- When the value of Capability\_BracketingVary is “White Balance” and the value of Capability\_CompressionLevel is “RAW”, ”RAW+JPEG”,.

This Capability has restrictions as follows.

- When the value of Capability\_LiveViewSelector is 1(movie live view),the setting of bracketing of the camera is ON. However, the camera can not perform bracketing. Therefore, the Module sets the value of this Capability to "False: OFF" and sets it to Read Only.( There are differences between the value and the setting prohibited state of Module and camera)
- When there are differences between Module and camera, and bracketing is included in setting prohibition condition of other Capability.  
The setting prohibited state of other Capability will be judged by the setting of bracketing of not Capability\_EnableBracketing but the camera.( There is no difference between the setting prohibited state of Module and camera in other Capability)

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.122. AEBracketingStep

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

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

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 Capability\_BracketingVary is “White Balance” or “ADL bracketing”.
- When the value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M
- When the value of Capability\_HDRMode is except “Off”.
- During movie file recording.
- The value of Capability\_LiveViewPhotoShootingMode is 1(ON) and the value of Capability\_BracketingVary is “Flash Only”.

### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.123. WBBracketingStep

This will set the white balance increment for WB bracketing.

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

The following cases, this Capability is read only

- When the value of Capability\_BracketingVary is except “White Balance”
- Whne the value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M
- When the value of Capability\_HDRMode is except “Off”.
- During movie file recording.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.124. **BracketingType**

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

<b>Capability</b>	kNkMAIDCapability_BracketingType
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDBracketingType 0: Minus_2 1: Plus_2 2: Minus_3 3: Plus_3 4: Both_3 5: Both_5 6: Both_7 7: Both_9 8: None_0

When Capability\_BracketingVary is “AE only” or “AE & flash” or “Flash only”, and Capability\_AEBracketingStep is set to 3EV or 2EV, "6: Both\_7", "7: Both\_9" are not enumerated.

When Capability\_EVInterval is changed, the value of this Capability becomes 8 (None - 0).

The following cases, this Capability is read only

- When the value of Capabilty\_BracketingVary is “ADL blacketing”.
- When the value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M
- When the value of Capabilty\_HDRMode is except “Off”.
- During movie file recording.
- The value of Capability\_LiveViewPhotoShootingMode is 1(ON) and then the value of Capability\_BracketingVary is “Flash Only”.

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.125. ADLBracketingType

This will set the bracketing shots when ADL bracketing.

<b>Capability</b>	kNkMAIDCapability_ADLBracketingType
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
<b>Data</b>	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(Off – Low – Normal – High – Extra High) 5 : 0 shots ※User settings use the setting of Capability_ADLBracketingStep.

The following cases, this Capability is read only.

- When the value of Capability\_BracketingVary is not “ADL bracketing”.
- When the value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M
- When the value of Capability\_HDRMode is except “Off”.
- During movie file recording.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.



### 3.126. ADLBracketingStep

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

<b>Capability</b>	kNkMAIDCapability_ADLBracketingStep
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
<b>Data</b>	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 Capabilty\_BracketingVary is not “ADL blacketing”.
- When the value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M
- When the value of Capabilty\_HDRMode is except “Off”.
- During movie file recording.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.127. 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

0: OFF

3: ON(Remote live view)

4:ON(Camera live view) \*It can use only kNkMAIDCapOperation\_Get

When the client start Remote live view, the client must set the value of this capability to 3(ON(Remote live view)). And when the client stop Live view, the client set the value of this capability to 0(OFF). If it is stopped Remote live view, the camera changes to Camera live view. In case of kNkMAIDCapOperation\_Get, the value of this Capability will show the current status of Live view.

When the value of this Capability is 3(ON(Remote live view)), it can be gotten Live view image by Capability\_GetLiveViewImage

The client should check this value before closing Source object, and if the value of this capability is 3(ON(Remote live view)), should 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 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.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.128. LiveViewProhibit

This will get 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 logical disjunction value of the following definition value.

value	Forbidden condition
0x00020000	High temperature and can not start live view.
0x00000100	battery shortage
0x00000004	Sequence error

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

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.129. 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

- 0: Horizontal or Unsettled
- 1: Vertical (Grip is top)
- 2: Vertical (Grip is bottom)
- 3: Horizontal (Up Down)

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.130. **RemainCotinuuousShooting**

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 – 360 (Default: 360)

The value of this capability will be changed by the following setting.

- Capability\_CompressionLevel
- Capability\_ImageSize
- Capability\_CompressRAWEx
- Capability\_CompressRAWBitMode□
- Capability\_NoiseReduction
- Capability\_NoiseReductionHighISO
- Capability\_ShootingLimit
- Capability\_CCDDataMode
- Capability\_HDRMode
- Capability\_LiveViewPhotoShootingMode
- Capability\_LiveViewSelector

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

Continuous shooting possible number of shootsis the number of sheets that can be got with this Capability..

The number of shots and HDR effective is one even if Capability\_ShootingMode is continuous shooting and Capability\_HDRMode is other than “Off”.

**Result Codes**

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.131. RemainCountInMedia

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

<b>Capability</b>	kNkMAIDCapability_RemainCountInMedia
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault
<b>Data</b>	0 - 4294967295 (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.

If the total number is over 4294967295, the upper limit is 4294967295.

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.132. LockExposure

This will get lock status of auto exposure.

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

When Set operation is executed on this Capability and kNkMAIDResult\_NoError is returned, it indicates that the request of the switching AE lock is accepted but the completion of the switching AE lock is not guaranteed.

The completion of switching can be confirmed by issuing the CapChangeValueOnly event from this Capability.

When Get operation is executed on this Capability, AE lock status at that time can be acquired.

Therefore, the set value (request content) is not held in this capability.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.133. 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

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.134. 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

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.135. ExposureStatus

This will get the exposure indicator status of Camera.

**Capability** kNkMAIDCapability\_ExposureStatus

**Object types** Source

**ulType** kNkMAIDCapType\_Float

**ulOperations** kNkMAIDCapOperation\_Get

**Data** -10EV~ +10EV step by 1/6 (Default : 0.0EV)

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.136. 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

**Result Codes**

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.137. FocalLength

This will get the focal length of the lens.

**Capability** kNkMAIDCapability\_FocalLength

**Object types** Source

**ulType** kNkMAIDCapType\_Float

**ulOperations** kNkMAIDCapOperation\_Get

**Data** IfValue (mm)

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

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.138. 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 no lens is attached, this Capability is always MF.

The value of 4(AF-F) can be got only during movie live view.

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.



### 3.139. 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 the value of Capability\_LiveViewSelector is 1(movie live view), the value of Capability\_EnableBracketing becomes OFF. Therefore, the value of this Capability will become 0(Disable).

However, there is a possibility that the camera's bracketing shot is ON.

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.140. 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

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.141. **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) (Default : 0.0EV)

This capability is valid when Capability\_ExternalNewTypeFlashMode is either “iTTL-BL(1)”, “iTTL(2)”, “AA(3)” or “GN(5)”.

**Result Codes**

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.142. ExternalFlashSort

This will get the sort of external speedlight.

**Capability** kNkMAIDCapability\_ExternalFlashSort

**Object types** Source

**ulType** kNkMAIDCapType\_Unsigned

**ulOperations** kNkMAIDCapOperation\_Get

**Data** one of eNkMAIDExternalFlashSort

0: non- communication.
2: new communication (with setting display)
4: new communication (without setting display )
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-5000 SB-910 SB-900 SB-800 SB-700 SB-600 SU-800	SB-500 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

### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.143. **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.

**Result Codes**

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.144. **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”

**Result Codes**

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.145. 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 depend on the setting of Capability\_FocusMode, Capability\_AFsPriority, Capability\_LiveViewSelector and Capability\_AFcPriority.

When Capability\_LiveViewSelector is "1: movie live view", it always shifts to shooting operation irrespective of the state after AF driving. Since the camera is fixed "priority release". When Capability\_ShootingMode is Continuous L or Continuous H, the maximum numbers of photo in which a seriography is possible is the smallest number in Capability\_RemainContinuousShooting, or the remaining numbers of bracketing shot.

The number of shots and HDR effective is one even if Capability\_ShootingMode is continuous shooting and Capability\_HDRMode is other than "Off".

When the module prepared to get a main image, the module issues kNkMAIDEvent\_AddChild to source object.

The media saved an image is specified by Capability\_SaveMedia.

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

- When the value of Capability\_ShutterSpeed is "Time".
- When the value of Capability\_RetractableLensWarningStatus is "True".
- When the value of Capability\_MovieLogOutput is "1(Outputting)"
- When the value of Capability\_SpotWBMode is 1(ON).

#### Result Codes

OutOfFocus	When the following all conditions are met. <ul style="list-style-type: none"><li>•The AF operation mode is the focus priority.</li><li>•The AF operation is out-of-focus,</li><li>•The value of Capability_LiveViewSelector is "0: live view photograh".</li></ul>
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
HardwareError	The error occurs on camera body.
MediaFull	If there is not free space in specified media
NoMedia	<ul style="list-style-type: none"><li>•If the card is under being formatted</li></ul>

	<ul style="list-style-type: none"> <li>•If no card is inserted and Capability_SaveMedia is "card", or "card and SDRAM".</li> <li>•When battery is low.</li> </ul>
InvalidMedia	If the card error has occurred on camera and Capability_SaveMedia is "card", or "card and SDRAM".
UnformattedMedia	If the card has unformatted and Capability_SaveMedia is "card", or "card and SDRAM".
MediaReadOnly	If the card is protected.
ApertureFEE	Aperture ring is not minimum.
BatteryDontWork	When battery is low.
ShutterBulb	When shutterspeed is bulb.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.146. ContrastAF

This will control contrast AF during live view.

<b>Capability</b>	kNkMAIDCapability_ContrastAF
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	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”.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
OutOfFocus	AF mode of operation is the focus priority, if the AF operation of out-of-focus.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.147. 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.

The following cases, the ulVisibility of this capability is invalid and read only.

- When the value of Capabilty\_FocusMode is “MF”.
- When CPUlens is not attached.
- When the value of Capabilty\_LiveViewStatus is “OFF”.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.



### 3.148. MFDrive

This will adjust focus position during live view.

<b>Capability</b>	kNkMAIDCapability_MFDrive
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Set
<b>Data</b>	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.

After this capability is executed correctly, the client can confirm whether manual focus driving finish correctly by performing kNkMAIDCapability\_DeviceReady. In addition, when the value of Capability\_LiveViewStatus is 3(ON(Remote live view)), it can be also confirmed by "focus drive state" of "Display information".

The following cases, the ulVisibility of this capability is invalid and read only.

- When the value of Capabilty\_FocusMode is "MF" or "AF-F"
- When CPUlens is not attached.
- When the value of Capabilty\_LiveViewStatus is "OFF".

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.149. ContrastAFArea

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

**Capability**            kNkMAIDCapability\_ContrastAFArea

**Object types**        Source

**ulType**                kNkMAIDCapType\_Point

**ulOperations**        kNkMAIDCapOperation\_Set

**Data**                typedef struct tagNkMAIDPoint  
                        {  
                        SLONG x; -----Coordinates of X axis  
                        SLONG y; -----Coordinates of Y axis  
                        } NkMAIDPoint, FAR\* LPNkMAIDPoint;

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 ulVisibility of this capability is invalid and read only.

- When the value of Capabilty\_LiveViewStatus is except “3:ON(remote live view)”.
- The value of Capability\_SpotWBMode is 1(ON).

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
NotLiveView	If remote live view does not be started.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.150. 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.

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 Capabilty\_ShutterSpeed is "Time".
- When the value of Capabilty\_LiveViewSelector is "1: movie live view".
- Capabilty\_RetractableLensWarningStatus is "True".
- When the value of Capabilty\_MovieLogOutput is 1(Outputting)
- When the value of Capabilty\_SpotWBMode is 1(ON)

#### Result Codes

CaptureDustFailure	If the camera failed in taking a dust off ref photo.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
HardwareError	The error occurs on camera body.
MediaFull	If there is not free space in specified media
NoMedia	If the card is under being formatted or no card is inserted and Capability_SaveMedia is "card", or "card and SDRAM". When battery is low.
InvalidMedia	If the card error has occurred on camera and Capability_SaveMedia is "card", or "card and SDRAM".
UnformattedMedia	If the card has unformatted and Capability_SaveMedia is "card", or "card and SDRAM".
MediaReadOnly	If the card is protected.
ApertureFEE	Aperture ring is not minimum.
BatteryDontWork	When battery is low.
ShutterBulb	Under bulb warning
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.151. 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 Card.

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

- During movie file recording.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.152. 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

#### Result Codes

NoMedia	If the card is being initialized. If no card is inserted. When battery is low.
NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.153. CurrentItemID

This will specify the DRAM 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.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.154. **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 an 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 maximum size.

The quality of the live view image that can be got by this Module is determined by the connection method with the camera.

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, the Live view image will be set to kNkMAIDArray.pData.

The following cases,, this Capability is read only.

- When the value of Capability\_LiveViewStatus is except 3(ON(Remote live view))
- When the value of Capability\_ LiveViewImageStatus is 0( Live view image can't be acquired)

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.

The format of the live view data is shown “LiveView data format”.

**Result Codes**

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.154.1. *LiveView data format*

	Field	Size	Description
Display information	Version	2Byte	Major version(0x01)
		2Byte	Minor version(0x00)

Reserved			4Byte	
Display information area size			4Byte	
Live view image area size			4Byte	
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	
Live view image size		Horizontal size	2Byte	This size is equal to the size setting by LiveViewImageSize.
		Vertical size	2Byte	
Live view image quality				The image quality will be the same as the value of LiveViewImageCompression 0:BASIC(Size priority) 1:BASIC(Image quality priority) 2:NORMAL(Size priority) 3:NORMAL(Image quality priority) 4:FINE(Size priority) 5:FINE(Image quality priority).
Reserve			7Byte	
AF driving enabled status			1Byte	0: AF driving disabled, 1: AF driving enabled
Focus driving status			1Byte	0: Not driving, 1: Driving
Focusing judgement result			1Byte	0: No information, 1: Not focused, 2: Focused
AF mode state			1Byte	0: Other 1: [Z 7] Face-priority AF [Z 7_FU1, Z 7_FU2] Face/eye-priority AF [Z 7_FU3] Face/eye/Animal-priority AF 2:Auto area AF
Selected focus area			1Byte	From 0 to 42
Selected face index			1Byte	From 0 to 34
Tracking status			1Byte	0:Waiting 1:Selecting 2:Tracking
Reserve			1Byte	
0 to 41	AF frame size	Horizontal size	2Byte	Area of the AF frame size and the AF frame center coordinates for 42 byte
		Vertical size	2Byte	
	AF frame center coordinates	Horizontal position	2Byte	
		Vertical position	2Byte	
Remaining time of movie recording			4Byte	From 0 to 1200000 [msec] * It is valid during the movie recording state.
Sound indicator (peak value)		L	1Byte	From 0 to 14
		R	1Byte	From 0 to 14
Sound indicator (current value)		L	1Byte	From 0 to 14
		R	1Byte	From 0 to 14
Movie recording information			1Byte	0: During LV execution 1: During movie recording
Synchronous recording state of external recording device			1Byte	Reserved in Z 7(fixed to 0)

	Reserve		1Byte	
	Timecode status		1Byte	0:OFF 1:ON
	Timecode count		1Byte	Hour
			1Byte	Minute
			1Byte	Second
			1Byte	Frame
	Countdown time		2Byte	Countdown every one second starting from 3600 (one hour) ; countdown starting from thirty seconds with a rise in temperature
	Spot WB condition		1Byte	0: Off 1: On standby (not acquired) 2: During acquisition operation 3: On standby (acquisition success) 4: On standby (acquisition failure)
	Rotation direction		1Byte	0: No rotation, 1: Rotate counterclockwise, 2: Rotate clockwise, 3: Upside down
	Level angle information	Rolling	4Byte	
		Pitching	4Byte	
		Yawing	4Byte	
	Use of white balance for live view photography		1Byte	Reserved in Z 7(fixed to 0)
	Reserve		95Byte	
Live image view	Image data			

The data specification of LiveViewObject (with version) is shown below.

No.	Description
1	The display information size is 512Byte.
2	When the ElectronicVR is ON, the through image has a field angle of 90%.

The AF frame size and the AF frame center coordinates are shown below.

No.	Description
1	The AF frame size and the AF frame center coordinates are valid only for the number of areas.

The value of the level angle information, refer to Capability below.

No.	Description
1	AngleLevel
2	AngleLevelPitch
3	AngleLevelYaw

[Z 7]

The details of the case in which the face-priority AF mode state is set to “1: Face-priority AF” are shown below.

No.	Description
1	Even if the number of AF area (persons whose faces) are detected is zero, AF mode state is set to “1: Face-priority AF”.
2	The focusing judgement result is set to a value other than “0: No information” for one second when the camera is in focus.

[Z 7\_FU1, Z 7\_FU2]

The details of the case in which the face-priority AF mode state is set to “1: Face/eye-priority AF” are shown below.

No.	Description
1	Even if the number of AF area (persons whose faces) are detected is zero, AF mode state is set to “1: Face/eye-priority AF”.
2	The focusing judgement result is set to a value other than “0: No information” for one



	second when the camera is in focus.
--	-------------------------------------

[Z 7\_FU3]

The details of the case in which the face-priority AF mode state is set to

“1:Face/eye/Animal-priority AF” are shown below.

No.	Description
1	Even if the number of AF area (persons whose faces) are detected is zero, AF mode state is set to “1: Face/eye/Animal-priority AF”.
2	The focusing judgement result is set to a value other than “0: No information” for one second when the camera is in focus.

### 3.155. GetVideoImageEx

This will get Movie image.

<b>Capability</b>	kNkMAIDCapability_GetVideoImageEx
<b>Object types</b>	Video
<b>ulType</b>	kNkMAIDCapType_Generic
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray
<b>Data</b>	pointer to NkMAIDGetVideoImageEx structure typedef struct tagNkMAIDGetVideoImageEx { NK_UINT_64 ullOffset;----- Offset address of file data before transfer NK_UINT_64 ullReadSize;-----Size of acquired data NK_UINT_64 ullDataSize;-----Size of buffer set to“pData” LPVOID pData;-----Pointer to buffer } NkMAIDGetVideoImageEx, FAR* LPNkMAIDGetVideoImageEx;

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 NkMAIDGetVideoImageEx.ullDataSize.

#### [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

NkMAIDGetVideoImageEx.pData, and set allocate size to NkMAIDGetVideoImageEx.ullDataSize.

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

NkMAIDGetVideoImageEx.ullReadSize and the offset address of file data before transfer will be set to NkMAIDGetVideoImageEx.ullOffset. (The Movie image of the

NkMAIDGetVideoImageEx.ullReadSize size is stored in NkMAIDGetVideoImageEx.pData.

The data stored in NkMAIDGetVideoImageEx.pData begin from the position indicated in NkMAIDGetVideoImageEx.ullOffset.)

If the size more than unacquired data of Movie image is set to NkMAIDGetVideoImageEx.ullDataSize, module will read only the actual unacquired data size.

Please set 0 to NkMAIDGetVideoImageEx. ullDataSizewhen the client want to stop the acquisition of Movie image on the way.

During the division acquisition of the Movie image data, if the following operation is executed, the camera resets the own division acquisition information and then the value of NkMAIDGetVideoImageEx.ullOffset becomes zero(0).

- Insertion and removal of a card.

- Execution of kNkMAIDCapOperation\_Set for kNkMAIDCapability\_MovRecInCardStatus.
- Execution of kNkMAIDCapOperation\_Start for the following Capabilities.
  - kNkMAIDCapability\_ResetMenuBank
  - kNkMAIDCapability\_ResetCustomSetting
  - kNkMAIDCapability\_ResetFileNumber
  - kNkMAIDCapability\_MovieResetMenuBank
- Capture (a) image(s) when the value of kNkMAIDCapability\_SaveMedia is 0(Card) or 2(Card + SDRAM).
- Execution of kNkMAIDCapOperation\_Set for Capabilities other than the above.
- Issuing interval of kNkMAIDCapability\_GetVideoImageEx is 60 seconds or more.

If the camera resets the own division acquisition information, it is necessary to stop data acquisition halfway or to reacquire from the beginning.

### Result Codes

NoMedia	If the card is being initialized. If no card is inserted. When battery is low.
NotSupported	• If you run the Operation that it is not supported against Capability. • During movie file recording. • When the movie is playing.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.156. 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(Remote mode) False: Unlock(PC-camera mode)

The following cases, this Capability is read only.

- During movie file recording..

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state. If this Capability can not be changed by the following operation. <ul style="list-style-type: none"><li>- Release operation</li><li>- AF operation</li><li>- Image sensor cleaning</li></ul>
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.157. CameraType

This will get the camera type.

**Capability** kNkMAIDCapability\_CameraType  
**Object types** Source  
**ulType** kNkMAIDCapType\_Unsigned  
**ulOperations** kNkMAIDCapOperation\_Get  
**Data** one of eNkMAIDCameraType  
0x48: Z 7  
0x4D: Z 7\_FU1(Z 7 firmup1)  
0x51: Z 7\_FU2(Z 7 firmup2)  
0x54: Z 7\_FU3(Z 7 firmup3)

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.158. **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
	0x00010000:AF-S
	0x00100000: Auto distortion control
	0x01000000: Retractable
	0x00000020: E type
	0x00000040:STM
	0x00000080:Always correct distortion

The value of this capability is expressed by logical disjunction value.

When CPU lens is not attached, the module returns 0

**Result Codes**

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.159. **MovRecInCardStatus**

This will start or stop movie recording to the external recording device or the card. In addition this will show status of movie recording.

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

When the client starts movie recording to the external recording device or the card, the client must set the value of this capability to 1(ON). And when the client stops movie recording to the external recording device or the card, the client must set the value of this capability to 0(OFF).However, the current value is switched to 0 (OFF) when the camera completes movie file recording. And the Module issues CapChangeValueOnly

If movie recording has been normally started, the Record destination is returned as Result of this Capability. (Refer to Result Codes.)

Stopping movie recording terminates recording of either the card or the external recording device.

In case of kNkMAIDCapOperation\_Get, the value of this capability will show the current status of movie recording.

If movie recording has been started form camera side, kNkMAIDEvent\_StartMovieRecord is issued and the value of this Capability is switched to 1(ON).

During movie recording, the information of the Recording device can be confirmed also by the live view data that gotten by Capability\_GetLiveViewImage.

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.

During movie recording, even if it is stopped the remote live view by the setteing Capability\_LiveViewStatus to 0 (OFF) , the camera switches to camera live view and keeps movie recording.

Taking a picture of the still picture is possible while movie recording.

The following cases, this capability is read only.

- The value of Capabilty\_LiveViewStatus is "OFF".
- The value of Capability\_LiveViewSelector is "0: live view photography".
- The value of Capability\_SpotWBMode is 1(ON).

### **Result Codes**

[When starting the movie recording is successful]

RecInCard	Recording by card
RecInExternalDevice	Recording by external device
RecInCardAndExternalDevice	Recording by both card and external device

[When starting the movie recording has failed]

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.160. **MovRecInCardProhibit**

This will get 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 logical disjunction value of the following definition value. When 0 returns, the status is not movie recording prohibition.

Value	Prohibition condition
0x00010000	When the following all conditions will be met. <ul style="list-style-type: none"><li>• The value of Capability_LiveViewStatus is 3(Remote live view)</li><li>• Waiting for synchronous recording by external recording device</li><li>• No card inserted</li></ul>
0x00008000	When the following conditions will be met. <ul style="list-style-type: none"><li>• The value of Capability_MovieLogOutput is 1(Outputting) and the value of Capability_ExternalRecordingControl is 0(OFF).</li><li>• The value of Capability_LiveViewStatus is 3(Remote live view)</li></ul>
0x00002000	Capability_LiveViewSelector is 0 (live view photography)
0x00001000	During enlarged display of Live view
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 access error
0x00000001	No card inserted(When it is waiting for the synchronous recording by external recording device, if there is no card, "0:invalid" is specified.)

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.

#### **Result Codes**



NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.161. **AngleLevel**

This will get 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.

#### **Result Codes**

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.162. AngleLevelPitch

This will get 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.

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.163. AngleLevelYaw

This will get 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.

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.164. SaveMedia

This will set the recording media by shooting, shutter-release button or Capability\_Capture or Capability\_AFCapture, Capability\_CaptureDustImage, Capability\_CaptureAsync, Capability\_AFCaptureAsync.

**Capability**            kNkMAIDCapability\_SaveMedia  
**Object types**        Source  
**ulType**              kNkMAIDCapType\_Unsigned  
**ulOperations**        kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_Set,  
                         kNkMAIDCapOperation\_GetDefault  
**Data**                one of eNkMAIDSaveMedia  
                         0: Card  
                         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).

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, or Capability\_CaptureDustImage, Capability\_CaptureAsync, Capability\_AFCaptureAsync.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.165. TerminateCapture

This capability will stop the shooting operation run from the host(module).

**Capability**            kNkMAIDCapability\_TerminateCapture  
**Object types**        Source  
**ulType**                kNkMAIDCapType\_Generic  
**ulOperations**        kNkMAIDCapOperation\_Start  
**Data**                 pointer to NkMAIDTerminateCapture structure  
                         typedef struct tagNkMAIDTerminateCapture  
                         {  
                             ULONG    ulParameter1;----- Specify 0.  
                             ULONG    ulParameter2;----- Specify 0.  
                         } NkMAIDTerminateCapture, FAR\* LPNkMAIDTerminateCapture;

This capability stops the following shooting operation run from the host(module)

shooting operation	the operation after stop shooting
Bulb shooting	The camera records the image until stop shooting, to card or to SDRAM.
continuous low/high speed shooting	The camera stops shooting.

The following cases, the ulVisibility of this capability is set to invalid and the ulOperations of this capability cannot be performed.

- During movie file recording.
- The exposure mode is Manual and Capability\_ShutterSpeed is other than “bulb” .(Module original specification)
- Capability\_ShootingMode is other than “1: Low-speed continuous shooting” , “2: High-speed continuous shooting” , “11: High-speed continuous shooting (extended) ” . (Module original specification)

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.166. **BlinkingStatus**

This will get 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

- 0: Both a shutter speed and an aperture are displayed with normal status.
- 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.

When in the bilb or time warning, the value of this Capability is “1: Only a shutter speed is displayed with blinking status.”

**Result Codes**

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.167. LiveViewSelector

This will set live view photography or movie live view.

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

The following cases, this Capability is read only.

- When the Capability\_LockCamera is “False:Unlock(PC-camera mode).”.
- During movie file recording.
- When the value of Capability\_SpotWBMode is 1(ON).

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.168. ResetWBMode

This will reset the white balance adjustment of Capability\_WBMode.

<b>Capability</b>	kNkMAIDCapability_ResetWBMode
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Process
<b>ulOperations</b>	kNkMAIDCapOperation_Start
<b>Data</b>	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.

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.



### 3.169. MovieShutterSpeed

This will set the shutter speed during movie live view

<b>Capability</b>	kNkMAIDCapability_MovieShutterSpeed
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	Strings of shutter time in second. (e.g.) "1/30", "1/40", "1/50" (Default : Minimum value of setting range)

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

Capability\_MovieShutterSpeed is used for during movie live view, during movie file recording, during "Live frame grab". Capability\_ShutterSpeed is used for taking photos, during live view photography.

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
120fps	1/125
100fps	1/100
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 Capabilty\_LiveViewStatus is "OFF".
- When the value of Capabilty\_LiveViewSelector is "0: live view photography".
- When the value of Capabilty\_ExpodureMode is except."Manual"
- When the value of Capability\_SpotWBMode is 1(ON).
- When the value of Capabilty\_ RetractableLensWarningStatus is "True: Warning about retraction"

The following cases, this Capability is read only and the Visibility of this capability is invalid.

- When sequence error has occurred.
- Aperture ring is not minimum.

## Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.170. 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", "2" ...  
                      (Default : Minimum value of setting range)

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

Capability\_MovieAperture is used for during movie live view, during movie file recording, during "Live frame grab". Capability\_Aperture is used for taking photos, during live view photography.

When the aperture value is an integer, the decimal point is not included in the string.

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 is returns "--".

When the movie live view does not executed, the Visibility of this capability is invalid.

The following cases, this Capability is read only.

- When aperture is not set to "minimum" (FEE, Aperture value error).
- When the exposure mode is setting except "Auto" and "Manual"
- When CPU 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 the value of Capability\_SpotWBMode is 1(ON).
- When the value of Capability\_RetractableLensWarningStatus is "True: Warning about retraction"

## Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.

DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.171. MovieSensitivity

This will set “ISO sensitivity(mode M)” for movie live view. (Movie 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\_EVInterval.

Capability_EVInterval	
1/3 step	1/2 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, 16000, 20000, 25600, 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, 18000, 25600 Hi-0.5, Hi-1.0, Hi-2.0

In the following case, the range of value of this Capability can be set is limited from 800 to 25600. If the range which can be set is changed, kNkMAIDEvent\_CapChange will be issued.

- When the value of Capability\_MovieLogOutput is 1(Outputting).

The following cases, this Capability is read only.

- When the value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M.
- During movie file recording, and the exposure mode is setting except Manual.

### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
------------------	--

NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.172. **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\_EVInterval. When the Capability\_EVInterval is changed, the module sends to the client kMAIDEvent\_CapChange.

The following cases, this Capability is read only.

- When the value of Capabilty\_LiveViewStatus is "OFF".
- When the value of Capabilty\_LiveViewSelector is "0: live view photography".
- When the value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode is setting "Auto"

#### **Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.173. **MovieRecFrameCount**

This will show the number of frames that can take the picture during movie recording.

**Capability**            kNkMAIDCapability\_MovieRecFrameCount  
**Object types**        Source  
**ulType**                kNkMAIDCapType\_Unsigned  
**ulOperations**        kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_GetDefault  
**Data**                  0 – 50 (Default: 50)

3.174. **RetractableLensWarningStatus**

This will get the status of RetractableLensWarning.

<b>Capability</b>	kNkMAIDCapability_RetractableLensWarningStatus
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Boolean
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault
<b>Data</b>	True: Warning about retraction <u>False: Not warning about retraction</u>

**Result Codes**

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.175. MovieWindNoiseReduction

This will set “Wind noise reduction”. (Movie Shooting Menu)

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

The following cases, this Capability is read only.

- During movie file recording and the value of Capability\_MovieRecMicrophone is “4: Microphone off”.
- When having connected the external microphone.
- When the value of Capability\_SpotWBMode is 1(ON).
- The value of Capability\_MovieScreenSize is “15 : 1920x1080 30p x4(slow-mo)”, “16 : 1920x1080 25p x4(slow-mo)” or “17 : 1920x1080 24p x5(slow-mo)”,

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.176. **MovieRecordingZone**

This will set “ Frequency response”. (Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieRecordingZone
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set
<b>Data</b>	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 and the value of Capability\_MovieRecMicrophone is “4: Microphone off”.
- The value of Capability\_ MovieScreenSize is “15 : 1920x1080 30p x4(slow-mo)”, “16 : 1920x1080 25p x4(slow-mo)”or “17 : 1920x1080 24p x5(slow-mo)”,

#### **Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.177. MovieISOControl

This will set “Movie ISO sensitivity setting - Auto ISO control (mode M)”. (Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieISOControl
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Boolean
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
<b>Data</b>	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, and the exposure mode is setting except Manual.
- When the exposure mode are setting except P, S, A, and M.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.



### 3.178. MovieISOAutoHiLimit

This will set “Movie ISO sensitivity setting - Maximum sensitivity”. (Movie Shooting Menu)

**Capability** kNkMAIDCapability\_MovieISOAutoHiLimit

**Object types** Source

**ulType** kNkMAIDCapType\_Unsigned

**ulOperations** kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_GetDefault, kNkMAIDCapOperation\_Set

**Data** one of eNkMAIDMovieISOAutoHiLimit3

eNkMAIDMovieISOAutoHiLimit3	Maximum sensitivity	EVInterval	
		1/3	1/2
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	12800	○	○
30	16000	○	×
31	18000	×	○
32	20000	○	×
33	25600	○	○
25	Hi-0.3	○	×
26	Hi-0.5	×	○
27	Hi-0.7	○	×
28	Hi-1.0	○	○
29	Hi-2.0	○	○

The value which can be set up by setup of Capability\_EVInterval changes.

In the following case, the range of ISO sensitivity for movie can be set is limited from 1600 to 25600.

If the range which can be set is changed, kNkMAIDEvent\_CapChange will be issued

- When the value of Capability\_MovieLogOutput is 1(Outputting).

The following cases, this Capability is read only.

- When the value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M.

## Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability. If the value that cannot set is set to this capability according to the EVInterval setting.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.179. MoviePictureControlDataEx2

This will set and get the Movie Picture Control data. (Movie Shooting Menu)

**Capability** kNkMAIDCapability\_MoviePictureControlDataEx2

**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: 614 bytes)
    bool bModifiedFlag; -----Modification flag
                                (false: initial registration, true: edit)
    void* pData;----- The pointer of Picture Control data.
} NkMAIDPicCtrlData, FAR* LPNkMAIDPicCtrlData;
```

The Picture control items to be specified in the ulPicCtrlItem, value ranges listed in Capability\_MoviePictureControl: to (except "100: Same as photo settings").

The following cases, this Capability is Read Only.

- During movie file recording.

About how to use of this capability and the format of picture control, refer to Capability\_PictureContorolDataEx2.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	<ul style="list-style-type: none"><li>• If you run the Operation that it is not supported against Capability.</li><li>• When the following all conditions will be met.<ul style="list-style-type: none"><li>- The ulPicCtrlItem is the Custom Picture Control.</li><li>- The bModifiedFlag is true.</li><li>- The ulPicCtrlItem and the BasePictureControl of the Picture Control Data do not match.</li></ul></li><li>• If the unsupported value has been set to the Picture Control data.</li><li>• If the invalid Picture Control data is specified.</li></ul>
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.180. **GetMoviePicCtrlInfo**

Not supported.

### 3.181. **DeleteMovieCustomPictureControl**

This will delete Custom Picture Control. (Movie Shooting Menu)

**Capability**            kNkMAIDCapability\_DeleteMovieCustomPictureControl

**Object types**        Source

**ulType**                kNkMAIDCapType\_Unsigned

**ulOperations**        kNkMAIDCapOperation\_Set

**Data**                  Custom Picture control item

Delete a custom picture control specified by the specified listed in Capability\_MoviePictureControl, one of the 1-9 custom picture control area, you run the Set.

During movie file recording, the Capability Set is not allowed.

The following case, this Capability is read only.

- During movie file recording.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.182. **MovieResetMenuBank**

This will reset the Movie Shooting Menu. (Movie Shooting Menu)

**Capability**            kNkMAIDCapability\_MovieResetMenuBank

**Object types**        Source

**ulType**                kNkMAIDCapType\_Process

**ulOperations**        kNkMAIDCapOperation\_Start

**Data**                  None

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

- During movie file recording.

#### Result Codes

NotSupported	<ul style="list-style-type: none"><li>• If you run the Operation that it is not supported against Capability.</li><li>• During saving movie frame.</li></ul>
DeviceBusy	If the camera is in the Busy state.

UnexpectedError	By the unexpected error, if it fails to execute the command.
-----------------	--

### 3.183. MovieCCDDataMode

This will set “Image area – Choose image area”. (Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieCCDDataMode
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
<b>Data</b>	one of eNkMAIDMovieCCDDataMode <u>0: FX Format</u> <u>1: DX Format</u>

The following cases, this Capability is read only.

- During movie file recording.
- When Capability\_SpotWBMode is 1(ON).
- The value of Capability\_ MovieScreenSize is “15 : 1920x1080 30p x4(slow-mo)”, “16 : 1920x1080 25p x4(slow-mo)”, “17 : 1920x1080 24p x5(slow-mo)”, “18 : 1920x1080 120p” or “19 : 1920x1080 100p”,
- DX lens is attached to the camera.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.184. **MovieWBPresetCode**

This will set the white balance preset data to the camera. (Movie Shooting Menu).

**Capability**        kNkMAIDCapability\_MovieWBPresetCode

**Object types**     Source

**ulType**            kNkMAIDCapType\_Generic

**ulOperations**     kNkMAIDCapOperation\_Set

**Data**              pointer to NkMAIDWBPresetCode structure

typedef struct tagNkMAIDWBPresetCode

{

    ULONG    ulPresetNumber;-----Preset No

    ULONG    ulPresetGain;----- Gain value

    ULONG    ulThumbnailSize;----- Size of thumbnails set to "pThumbnailData"

    ULONG    ulThumbnailRotate;---Not use

    void\*    pThumbnailData;----- Pointer to the thumbnail data

    } NkMAIDWBPresetCode, FAR\* LPNkMAIDWBPresetCode;

It will be the same as Capability\_WBPresetCode for the usage of this Capability.

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).

#### **Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability. If the ulPresetNumber with Capability_MovieWBPresetCodeProtectX setting is On(1).
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.185. MovieWBMode

This will set the white balance mode. (Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieWBMode
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	Auto, Incandescent, Fluorescent, Sunny, Shade, Cloudy, Preset1, Preset2, Preset3, Preset4, Preset5, Preset6 Color Temperature Natural <u>Same as photo settings</u>

If the camera is recording a movie, “Same as photo settings” is not included in the enumeration.

However, if it is set to the current value, it is included in the enumeration.

The following cases, this Capability is read only.

- When Capability\_SpotWBMode is 1(ON).
- During movie file recording, and the value of Capability\_ MovieWBMode is “Same as photo settings”.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

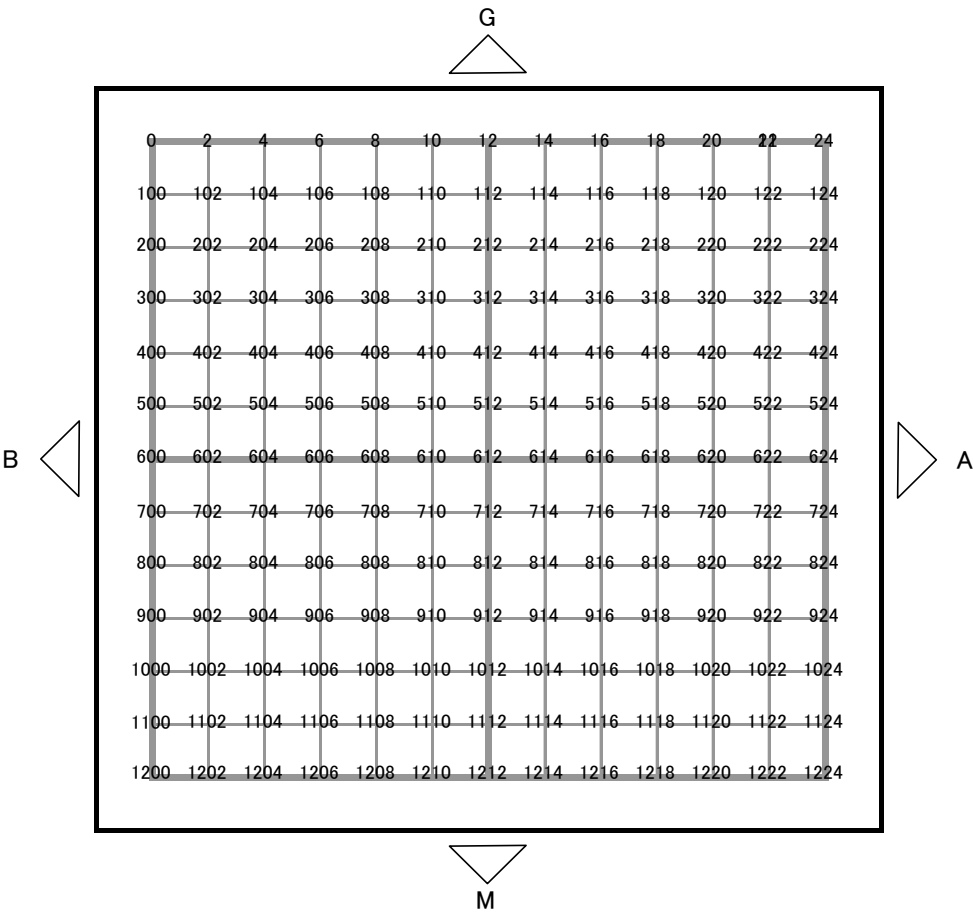


3.186. **MovieWB TuneAuto**

This will set the white balance adjustment when the WBMode is “Auto”. (Movie Shooting Menu)

**Capability**            kNkMAIDCapability\_MovieWB TuneAuto  
**Object types**        Source  
**ulType**                kNkMAIDCapType\_Range  
**ulOperations**        kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_Set  
**Data**                  0 to 1224 step=1    (Default: 612)

Relation to the set of coordinates and camera white balance correction value as in the figure below.  
AB direction is 0.5 step increments, and GM direction is 0.25 step increments.



The following cases, this Capability is read only.

- When Capability\_SpotWBMode is 1(ON).
- During movie file recording, and the value of Capability\_ MovieWBMode is “Same as photo settings”.
- When the exposure mode are setting except P, S, A, and M.

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.

DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.187. MovieWBAutoType

This will set the option when the white balance auto. (Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieWBAutoType
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
<b>Data</b>	one of eNkMovieWBAutoType 1 : Keep warm lighting colors 2 : Keep white(reduce warm colors) <u>3: Keep atmosphere</u>

The following cases, this Capability is read only.

- When Capability\_SpotWBMode is 1(ON).
- During movie file recording, and the value of Capability\_ MovieWBMode is “Same as photo settings”.
- When the exposure mode are setting except P, S, A, and M.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.188. **MovieWB TuneIncandescent**

This will set the white balance adjustment when the WBMode is “Incandescent”.  
(Movie Shooting Menu)

**Capability**            kNkMAIDCapability\_MovieWB TuneIncandescent  
**Object types**        Source  
**ulType**                kNkMAIDCapType\_Range  
**ulOperations**        kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_Set  
**Data**                  0 to 1224 step=1 (Default: 612)

Relationship of setting the coordinates of the camera and white balance correction value is the same as for MovieWB TuneAuto.

- The following cases, this Capability is read only.
- When Capability\_SpotWBMode is 1(ON).
  - During movie file recording, and the value of Capability\_ MovieWBMode is “Same as photo settings”.
  - When the exposure mode are setting except P, S, A, and M.

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.189. **MovieWBFluorescentType**

This will set the fluorescent type when the WBMode is “Fluorescent”.

(Movie Shooting Menu)

Capability	kNkMAIDCapability_MovieWBFluorescentType
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
Data	one of eNkMAIDMovieWBFluorescentType 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.

- When Capability\_SpotWBMode is 1(ON).
- During movie file recording, and the value of Capability\_ MovieWBMode is “Same as photo settings”.
- When the exposure mode are setting except P, S, A, and M.

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.190. **MovieWB TuneFluorescent**

This will set the white balance adjustment when the WBMode is “Fluorescent”.  
(Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieWB TuneFluorescent
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Range
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set
<b>Data</b>	0 to 1224 step=1 (Default: 612)

Relationship of setting the coordinates of the camera and white balance correction value is the same as for MovieWB TuneAuto.

The following cases, this Capability is read only.

- When Capability\_SpotWBMode is 1(ON).
- During movie file recording, and the value of Capability\_ MovieWBMode is “Same as photo settings”.
- When the exposure mode are setting except P, S, A, and M.

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.191. **MovieWB TuneSunny**

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

(Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieWB TuneSunny
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Range
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set
<b>Data</b>	0 to 1224 step=1 (Default: 612)

Relationship of setting the coordinates of the camera and white balance correction value is the same as for MovieWB TuneAuto.

The following cases, this Capability is read only.

- When Capability\_SpotWBMode is 1(ON).
- During movie file recording, and the value of Capability\_ MovieWBMode is “Same as photo settings”.
- When the exposure mode are setting except P, S, A, and M.

#### **Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.192. **MovieWB TuneShade**

This will set the white balance adjustment when the WBMode is “Shade”.  
(Movie Shooting Menu)

**Capability**            kNkMAIDCapability\_MovieWB TuneShade  
**Object types**        Source  
**ulType**                kNkMAIDCapType\_Range  
**ulOperations**        kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_Set  
**Data**                  0 to 1224 step=1 (Default: 612)

Relationship of setting the coordinates of the camera and white balance correction value is the same as for MovieWB TuneAuto.

The following cases, this Capability is read only.

- When Capability\_SpotWBMode is 1(ON).
- During movie file recording, and the value of Capability\_ MovieWBMode is “Same as photo settings”.
- When the exposure mode are setting except P, S, A, and M.

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.



3.193. **MovieWB Tune Cloudy**

This will set the white balance adjustment when the WBMode is “Cloudy”.  
(Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieWB Tune Cloudy
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Range
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set
<b>Data</b>	0 to 1224 step=1 (Default: 612)

Relationship of setting the coordinates of the camera and white balance correction value is the same as for MovieWB Tune Auto.

The following cases, this Capability is read only.

- When Capability\_SpotWBMode is 1(ON).
- During movie file recording, and the value of Capability\_ MovieWBMode is “Same as photo settings”.
- When the exposure mode are setting except P, S, A, and M.

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.194. **MovieWB TuneColorTempEx**

This will set the color temperature when the WBMode is “Color Temperature”.  
(Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieWB TuneColorTempEx
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Range
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set
<b>Data</b>	2500 to 10000 step=10 (Default: 5000)

Relationship of setting the coordinates of the camera and white balance correction value is the same as for MovieWB TuneAuto.

The following cases, this Capability is read only.

- When Capability\_SpotWBMode is 1(ON).
- During movie file recording, and the value of Capability\_ MovieWBMode is “Same as photo settings”.
- When the exposure mode are setting except P, S, A, and M.

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.195. **MovieWB TuneColorAdjust**

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

(Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieWB TuneColorAdjust
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Range
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set
<b>Data</b>	0 to 48 step=1 (Default: 24)

Relationship of setting the coordinates of the camera and white balance correction value is the same as for MovieWB TuneAuto.

The following cases, this Capability is read only.

- When Capability\_SpotWBMode is 1(ON).
- During movie file recording, and the value of Capability\_ MovieWBMode is “Same as photo settings”.
- When the exposure mode are setting except P, S, A, and M.

#### **Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.196. **MovieWB TuneNatural**

This will set the white balance adjustment when the WBMode is “Natural” (Movie Shooting Menu).

<b>Capability</b>	kNkMAIDCapability_MovieWB TuneNatural
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Range
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set
<b>Data</b>	0 to 1224 step=1 (Default: 612)

Relationship of setting the coordinates of the camera and the white balance correction value is the same as for MovieWB TuneAuto.

The following cases, this Capability is read only.

- When Capability\_SpotWBMode is 1(ON).

- During movie file recording, and the value of Capability\_ MovieWBMode is “Same as photo settings”.
- When the exposure mode are setting except P, S, A, and M.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.197. **MovieWB TunePreset1**

This will set the white balance adjustment when the WBMode is “Preset1”.  
(Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieWB TunePreset1
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Range
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set
<b>Data</b>	0 to 1224 step=1 (Default: 612)

Relationship of setting the coordinates of the camera and white balance correction value is the same as for MovieWB TuneAuto.

The following cases, this Capability is read only.

- During movie file recording, and the value of Capability\_ MovieWBMode is “Same as photo settings”.
- When Capability\_SpotWBMode is 1(ON).
- The value of Capability\_MovieWb TunePresetProtect1 is set to “ON”.
- The value of Capability\_ MovieWBMode is except “Preset1”.
- When the exposure mode are setting except P, S, A, and M.

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.198. **MovieWB TunePreset2**

This will set the white balance adjustment when the WBMode is “Preset2”.  
(Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieWB TunePreset2
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Range
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set
<b>Data</b>	0 to 1224 step=1 (Default: 612)

Relationship of setting the coordinates of the camera and white balance correction value is the same as for MovieWB TuneAuto.

- The following cases, this Capability is read only.
- During movie file recording, and the value of Capability\_ MovieWBMode is “Same as photo settings”.
  - When Capability\_SpotWBMode is 1(ON).
  - The value of Capability\_MovieWb TunePresetProtect2 is set to “ON”.
  - The value of Capability\_ MovieWBMode is except “Preset2”.
  - When the exposure mode are setting except P, S, A, and M.

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.199. **MovieWB TunePreset3**

This will set the white balance adjustment when the WBMode is “Preset3”.  
(Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieWB TunePreset3
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Range
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set
<b>Data</b>	0 to 1224 step=1 (Default: 612)

Relationship of setting the coordinates of the camera and white balance correction value is the same as for MovieWB TuneAuto.

The following cases, this Capability is read only.

- During movie file recording, and the value of Capability\_ MovieWBMode is “Same as photo settings”.
- When Capability\_SpotWBMode is 1(ON).
- The value of Capability\_MovieWb TunePresetProtect3 is set to “ON”.
- The value of Capability\_ MovieWBMode is except “Preset3”.
- When the exposure mode are setting except P, S, A, and M.

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.200. **MovieWB TunePreset4**

This will set the white balance adjustment when the WBMode is “Preset4”.  
(Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieWB TunePreset2
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Range
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set
<b>Data</b>	0 to 1224 step=1 (Default: 612)

Relationship of setting the coordinates of the camera and white balance correction value is the same as for MovieWB TuneAuto.

The following cases, this Capability is read only.

- During movie file recording, and the value of Capability\_ MovieWBMode is “Same as photo settings”.
- When Capability\_SpotWBMode is 1(ON).
- The value of Capability\_MovieWb TunePresetProtect4 is set to “ON”.
- The value of Capability\_ MovieWBMode is except “Preset4”.
- When the exposure mode are setting except P, S, A, and M.

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.



3.201. **MovieWB TunePreset5**

This will set the white balance adjustment when the WBMode is “Preset5”.  
(Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieWB TunePreset5
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Range
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set
<b>Data</b>	0 to 1224 step=1 (Default: 612)

Relationship of setting the coordinates of the camera and white balance correction value is the same as for MovieWB TuneAuto.

The following cases, this Capability is read only.

- During movie file recording, and the value of Capability\_ MovieWBMode is “Same as photo settings”.
- When Capability\_SpotWBMode is 1(ON).
- The value of Capability\_MovieWb TunePresetProtect5 is set to “ON”.
- The value of Capability\_ MovieWBMode is except “Preset5”.
- When the exposure mode are setting except P, S, A, and M.

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.202. **MovieWB TunePreset6**

This will set the white balance adjustment when the WBMode is “Preset6”.  
(Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieWB TunePreset6
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Range
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set
<b>Data</b>	0 to 1224 step=1 (Default: 612)

Relationship of setting the coordinates of the camera and white balance correction value is the same as for MovieWB TuneAuto.

The following cases, this Capability is read only.

- During movie file recording, and the value of Capability\_ MovieWBMode is “Same as photo settings”.
- When Capability\_SpotWBMode is 1(ON).
- The value of Capability\_MovieWb TunePresetProtect6 is set to “ON”.
- The value of Capability\_ MovieWBMode is except “Preset6”.
- When the exposure mode are setting except P, S, A, and M.

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.203. **MovieWBPresetProtect1**

This will set the protection of white balance preset 1. (Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieWBPresetProtect1
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDMovieWBPresetProtect1 <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 exposure mode are setting except P, S, A, and M.

#### **Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.204. **MovieWBPresetProtect2**

This will set the protection of white balance preset 2. (Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieWBPresetProtect2
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDMovieWBPresetProtect2 <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 exposure mode are setting except P, S, A, and M.

#### **Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.205. **MovieWBPresetProtect3**

This will set the protection of white balance preset 3. (Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieWBPresetProtect3
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDMovieWBPresetProtect3 <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 exposure mode are setting except P, S, A, and M.

#### **Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.206. **MovieWBPresetProtect4**

This will set the protection of white balance preset 4. (Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieWBPresetProtect4
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDMovieWBPresetProtect4 <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 exposure mode are setting except P, S, A, and M.

#### **Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.207. **MovieWBPresetProtect5**

This will set the protection of white balance preset 5. (Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieWBPresetProtect5
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDMovieWBPresetProtect5 <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 exposure mode are setting except P, S, A, and M.

#### **Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.208. **MovieWBPresetProtect6**

This will set the protection of white balance preset 6. (Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieWBPresetProtect6
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDMovieWBPresetProtect6 <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 exposure mode are setting except P, S, A, and M.

#### **Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.



3.209. **MovieWBPresetNumber**

This will set the preset number referenced by the Capability\_MovieWBGainRed, Capability\_MovieWBGainBlue. (Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieWBPresetNumber
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	<u>Preset 1</u> , Preset 2, Preset 3, Preset 4, Preset 5, Preset 6

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.210. MovieWBPresetName

This will set the name of white balance preset data. (Movie Shooting Menu)

**Capability**            kNkMAIDCapability\_MovieWBPresetName

**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 to set the name of preset white balance data in the order of Preset1 ~ 6 to NkMAIDArray.pData.

If the string of more than 36 bytes in the name of each preset white balance data is set, it is ignored and subsequent 37 bytes.

Valid characters are only ASCII code of 90 characters.( refer to the ASCII code table).

The (kNkMAIDResult\_NotSupported) error when performing Set for preset data is set to: "1" is Capability\_MovieWBPresetProtect1 ~ 6.

The following cases, this Capability is read only.

- During movie file recording.
- When Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability. If the client set to the white balance preset data with Capability_MovieWBPresetProtectX setting is On(1).
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.211. MovieWBGainRed

This will get the gain red of white balance preset data selected by the Capability\_MovieWBPresetNumber. (Movie Shooting Menu)

**Capability** kNkMAIDCapability\_MovieWBGainRed

**Object types** Source

**ulType** kNkMAIDCapType\_Range

**ulOperations** kNkMAIDCapOperation\_Get

**Data** Min: 0 Max: 7.99804 (16380/2048)

Step: 0.00195 (4/2048) (Default: 1)

[Regarding range of value]

Depend on the ulPresetGain format of WBPresetData, the lower 2 bits are invalid

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.212. MovieWBGainBlue

This will get the gain blue of white balance preset data selected by the Capability\_MovieWBPresetNumber. (Movie Shooting Menu)

**Capability** kNkMAIDCapability\_MovieWBGainBlue

**Object types** Source

**ulType** kNkMAIDCapType\_Range

**ulOperations** kNkMAIDCapOperation\_Get

**Data** Min: 0 Max: 7.99804 (16380/2048)

Step: 0.00195 (4/2048) (Default: 1)

[Regarding range of value]

Depend on the ulPresetGain format of WBPresetData, the lower 2 bits are invalid

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.213. **MovieResetWBMode**

This will reset the white balance adjustment of Capability\_MovieWBMode.

**Capability**            kNkMAIDCapability\_MovieResetWBMode

**Object types**        Source

**ulType**                kNkMAIDCapType\_Process

**ulOperations**        kNkMAIDCapOperation\_Start

**Data**                 None

By the execution of this Capability, Capability of the following is reset.

- Capability\_MovieWBMode
- Capability\_MovieWBTuneAuto
- Capability\_MovieWBAutoType
- Capability\_MovieWBTuneIncandescent
- Capability\_MovieWBTuneFluorescent
- Capability\_MovieWBFluorescentType
- Capability\_MovieWBTuneSunny
- Capability\_MovieWBTuneCloudy
- Capability\_MovieWBTuneShade
- Capability\_MovieWBTuneNatural
- Capability\_MovieWBTuneColorTemp
- Capability\_MovieWBColorAdjust

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

- During movie file recording.
- When Capability\_SpotWBMode is 1(ON).

#### **Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.214. **MovieNoiseReductionHighISO**

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

Capability	kNkMAIDCapability_MovieNoiseReductionHighISO
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
Data	one of eNkMAIDMovieNoiseReductionHighISO 0: OFF <u>1: ON (Default)</u> 2: ON (High) 3: ON (Low)

- The following cases, this Capability is read only.
- During movie file recording.
  - When Capability\_SpotWBMode is 1(ON).
  - The value of Capability\_MovieLogOutput is 1(Outputting).

**Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.215. **MoviePictureControl**

This will set Picture Control. (Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MoviePictureControl
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDMoviePictureControl 1: Standard 2: Neutral 3: Vivid 4: Monochrome 5: Portrait 6: Landscape 7: Flat 8: Auto <u>100: Same as photo settings</u> 101: Dream 102: Morning 103: Pop 104: Sunday 105: Somber 106: Dramatic 107: Silence 108: Breached 109: Melancholic 110: Pure 111: Denim 112: Toy 113: Sepia 114: Blue 115: Red 116: Pink 117: Charcoal 118: Graphite 119: Binary 120: Carbon

## 201 - 209: Custom Picture Control 1 – 9

Represents the picture control item that is set is currently active.

Custom picture control area are listed all the ones that are not currently registered. Whether the data to the picture control area is registered, it is determined in the "Custom flag" of the picture control data.

If the picture control item that used as the current configuration has been changed, CapChangeValueOnly events for this Capability is issued.

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M.
- The value of Capability\_MovieLogOutput is 1(Outputting).

### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability. If the client sends kNkMAIDCapOperation_Set with unused Picture Control.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.216. ISOControlSensitivity

This will get the ISO sensitivity which the camera is controlling.

**Capability** kNkMAIDCapability\_ISOControlSensitivity

**Object types** Source

**ulType** kNkMAIDCapType\_Unsigned

**ulOperations** kNkMAIDCapOperation\_Get

**Data** one of NkMAIDISOControlSensitivity8

NkMAIDISOControlSensitivity8	ISO	NkMAIDISOControlSensitivity8	ISO
32	Lo1.0	10000	ISO10000
40	Lo0.7	11000	ISO11000
45	Lo0.5	12800	ISO12800
50	Lo0.3	14400	ISO14400
64	ISO64	16000	ISO16000
72	ISO72	18000	ISO18000
80	ISO80	20000	ISO20000
90	ISO90	22000	ISO22000
100	ISO100	25600	ISO25600
110	ISO110	28800	Hi0.2
125	ISO125	32000	Hi0.3
140	ISO140	36000	Hi0.5
160	ISO160	40000	Hi0.7
180	ISO180	45600	Hi0.8
200	ISO200	51200	Hi1.0
220	ISO220	57600	Hi1.2
250	ISO250	64000	Hi1.3
280	ISO280	72000	Hi1.5
320	ISO320	81200	Hi1.7
360	ISO360	91200	Hi1.8
400	ISO400	102400	Hi2.0
450	ISO450		
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		
5000	ISO5000		
5600	ISO5600		
6400	ISO6400		
7200	ISO7200		
8000	ISO8000		
9000	ISO9000		



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## Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.217. **MovieMeteringMode**

This will set “Metering”.( Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieMeteringMode
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set kNkMAIDCapOperation_GetDefault
<b>Data</b>	one of eNkMAIDMovieMeteringMode <u>0: Matrix</u> 1: Center weighted 2: Highlight

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).
- The exposure mode is setting ”Auto”.
- The value of Capability\_LockExposure is True: Lock

#### **Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.218. **LiveViewImageSize**

This will set the size for Live View image

<b>Capability</b>	kNkMAIDCapability_LiveViewImageSize
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDLiveViewImageSize 1: QVGA <u>2: VGA</u> 3: XGA

The following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

#### **Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.219. SpotWBMode

This will set the ON / OFF state of waiting to acquire SpotWB.

<b>Capability</b>	kNkMAIDCapability_SpotWBMode
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
<b>Data</b>	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, so this capability must be set to “0: OFF”.

The destination specified in the Capability\_MovieWBMode is used for this capability. When the value of Capability\_MovieWBMode is "Same as photo settings", the destination that is specified in the Capability\_WBMode is used for this capability.

The following cases, this Capability is read only.

- The value of Capability\_LockCamera is False:Unlock(PC-camera mode).
- The value of Capability\_LiveViewSelector is “0: live view photography”.
- The value of Capability\_LiveViewStatus is except “3:ON(Remote live view)”.
- During movie file recording.
- The value of Capability\_HDRMode is except “0: OFF”.
- The value of Capability\_MovieWBMode are except “Preset1~6” and “same as photo settings”
- When state of “Preset1~6” that set to Capability\_MovieWBMode is protected .
- When the value of Capability\_MovieWBMode is “same as photo settings”, and the value of Capability\_WBMode is except “Preset1~6”.
- When the value of Capability\_MovieWBMode is “same as photo settings”, and the state of “Preset1~6” is protected that set to Capability\_WBMode.
- When the value of Capability\_LiveViewSelector is “1: movie live view” and the value of Capability\_MovieReleaseButton is “1: Record movie”.
- When the value of Capability\_ExposureMode is one of the following cases.
  - 5: Auto

15: U1(UserMode1)

16: U2(UserMode2)

18: U3(UserMode3)

### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotLiveView	If the remote live view does not be started.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.220. 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.

Obtaining results of the spot WB information is notified by the display information of the live view data acquired in Capability\_GetLiveViewImage.

It is possible to perform the operation of obtaining the WB information again by executing the Capability for release after the Spot WB acquisition result screen, the spot WB state is waiting.

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.

### Result Codes

NotLiveView	If the live view does not be started.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.221. 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**                typedef struct tagNkMAIDPoint  
                      {  
                      SLONG x;    Coordinates of the X-axis  
                      SLONG y;    Coordinates of the Y-axis  
                      } NkMAIDPoint, FAR\* LPNkMAIDPoint;

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.

#### Result Codes

NotLiveView	If live view does not be started.
NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.222. **SpotWBResultDispEnd**

This capability releases the display of SpotWB result.

<b>Capability</b>	kNkMAIDCapability_SpotWBResultDispEnd
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Process
<b>ulOperations</b>	kNkMAIDCapOperation_Start
<b>Data</b>	None

By executing this capability, the value of the "SpotWB status", retrieved by GetLiveViewImage, is modified as follows.

- 3: OFF(Acquisition success) → 0: OFF, or
- 4: Waiting(Acquisition failure) → 1: Waiting(Not acquired)

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

- When the value of Capability\_LiveViewStatus is except “3(ON(Remote live view))”.
- During movie file recording.

**Result Codes**

NotLiveView	If live view does not be started.
NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.223. 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”.

<b>Capability</b>	kNkMAIDCapability_RawJpegTransferStatus
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_ Boolean
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
<b>Data</b>	True : JPEG only <u>False : RAW &amp; 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”.

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, Capability\_CaptureDustImage, Capability\_CaptureAsync or Capability\_AFCaptureAsync.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.



### 3.224. GetSBHandles

This capability obtains the handle of the flash attached with the camera.

<b>Capability</b>	kNkMAIDCapability_GetSBHandles
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Generic
<b>ulOperations</b>	kNkMAIDCapOperation_Get
<b>Data</b>	<p>pointer to NkMAIDGetSBHandles structure</p> <pre> typedef struct tag NkMAIDGetSBHandles {     ULONG    ulSBGroupID;----0 : all flashes、 N : one of SBGroupID                                    (one of <u>eNkMAIDSBGroupID</u>)     ULONG    ulNumber;-----The number of SBHandle in the list     ULONG    ulSize;----- The size of pData.     void*    pData;----- The pointer of <u>SBHandle</u> list※ } NkMAIDGetSBHandles, FAR* LPNkMAIDGetSBHandles; </pre>

✖The format of SBHandle list is shown below.

N : The number of SBHandle in the list

Field	Size	DataType
SBHandle 1	4	UINT32
SBHandle 2	4	UINT32
...	4	UINT32
SBHandle N-1	4	UINT32
SBHandle N	4	UINT32

The client gets SBHandle in the following procedure.

Step.1. Get the number of SBHandle in the list.

Step.2. Get the list of SBHandle.

■Step.1. Get the number of SBHandle in the list.

The client must set the following member of `NkMAIDGetSBHandles`.

- **ulSBGroupID** : Specify the SBGroupID to be acquisition target.
- **ulNumber** : Specify 0.

After execution, the following members of `NkMAIDGetSBHandles` are set.

- ulNumber : The total number of SBHandle to be acquisition target.
- ulSize : The data size for acquisition of SBHandle list.

■Step.2. Get the list of SBHandle.

The client must set the following member of `NkMAIDGetSBHandles`.

- **ulSBGroupID** : Specify the SBGroupID to be acquisition target.

- ulNumber : Specify the number of SBHandle to be acquisition target.
- ulSize : Specify the size of pData (The buffer size for the acquisition to SBHandle list.)
- pData : Specify the pointer of SBHandle list.

After execution, the following members of NkMAIDGetSBHandles are set.

- ulSize : The buffer size of SBHandle list, which is set to pData.
- pData : SBHandle list.

## Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.225. GetSBAttrDesc

This capability obtains the descriptor of the attribute for the flash.

Capability	kNkMAIDCapability_GetSBAttrDesc
------------	---------------------------------

Object types	Source
--------------	--------

- ulType** kNkMAIDCapType\_Generic

- ulOperations
- kNkMAIDCapOperation\_Get

<b>Data</b>	pointer to NkMAIDGetSBAttrDesc structure
-------------	--

typedef struct tag NkMAIDGetSBAttrDesc

 $\{$ 

ULONG ulSBHandle;-----0 : all flashes、 N : one of SBHandle

(eNkMAIDSBHandle, or one of SBHandle)

ULONG ulSBAAttrID; -----0 : all SBAAttrID, N : one of SBAAttrID

(one of eNkMAIDSBAttribute)

ULONG ulSize;----- The size of pData.

void\* pData;----- The pointer of SBHandleAttributeDescList✖

```
} NkMAIDGetSBAttrDesc, FAR* LPNkMAIDGetSBAttrDesc;
```

※The format of SBHandleAttributeDescList is shown at “[SBHandleAttributeDescList](#)”

### 3.225.1. *SBHandleAttributeDescList*

Field	DataSize	DataType or Data Set	Description
NumberOfElements	4	UINT32	The number of SBHandle in the list.
Element1 SBHandle	4	SBHandle	SBHandle for element1.
Element1 SBAttributeDescList	DTS	Refer to <u>SBAttributeDescList</u>	Attribute descriptor of the element1 flash.
Element2 SBHandle	4	SBHandle	SBHandle for element2.
Element2 SBAttributeDescList	DTS	Refer to <u>SBAttributeDescList</u>	Attribute descriptor of the element2 flash.
...			
ElementN SBHandle	4	SBHandle	SBHandle for element N.
ElementN SBAttributeDescList	DTS	Refer to SBAttributeDescList	Attribute descriptor of the element N flash.

### 3.225.2. *SBAAttributeDescList*

Field	Size (Byte)	Data Type or Data Set	Description
NumberOfElements	4	UINT32	The number of the attribute in the list.
Element1 AttributeDesc	DTS	Refer to <u>SBAttributeDesc</u>	SBAttributeDesc for element 1
Element2 AttributeDesc	DTS	Refer to <u>SBAttributeDesc</u>	SBAttributeDesc for element 2
...			
ElementN AttributeDesc	DTS	Refer to <u>SBAttributeDesc</u>	SBAttributeDesc for element N

### 3.225.3. *SBAAttributeDesc*

Field	Size (Byte)	Data Type	Description
AttributeID	2	UINT16	SBAAttrID or SBGroupAttrID
DataType	2	UINT16	Data type of the attribute The value varies depending on the attribute. Refer to <u>Data Type Code</u>
GetSet	1	UINT8	Availability of Get and Set operation.

			0x00: Only Get operation is available (Get) 0x01: Get and Set operation are available (Get / Set)
DefaultValue	DTS	DTS	The default value in the camera The value varies depending on the attribute.
CurrentValue	DTS	DTS	The current value in the camera The value varies depending on the attribute.
FormFlag	1	UINT8	Type of the descriptor 0x00: None 0x01: Range 0x02: Enumeration
FORM	DTS	DTS	The value in the field is depending on FormFlagfield. If FormFlag is 0, this field doesn't exist.

#### 3.225.4. DataTypeCode

DataTypeCode	Type	Description
0x0001	INT8	Signed 8-bit integer
0x0002	UINT8	Unsigned 8-bit integer
0x0003	INT16	Signed 16-bit integer
0x0004	UINT16	Unsigned 16-bit integer
0x0005	INT32	Signed 32-bit integer
0x0006	UINT32	Unsigned 32-bit integer
0x0007	INT64	Signed 64-bit integer
0x0008	UINT64	Unsigned 64-bit integer
0x0009	INT128	Signed 128-bit integer
0x000A	UINT128	Unsigned 128-bit integer
0x4001	AIN8	Signed 8-bit integer array
0x4002	AUINT8	Unsigned 8-bit integer array
0x4003	AIN16	Signed 16-bit integer array
0x4004	AUINT16	Unsigned 16-bit integer array
0x4005	AIN32	Signed 32-bit integer array
0x4006	AUINT32	Unsigned 32-bit integer array
0x4007	AIN64	Signed 64-bit integer array
0x4008	AUINT64	Unsigned 64-bit integer array
0x4009	AIN128	Signed 128-bit integer array
0x400A	AUINT128	Unsigned 128-bit integer array
0xFFFF	STR	Variable length Unicode character string

The client gets the descriptor of the attribute for the flash in the following procedure.

Step.1. Get the size of the descriptor of the attribute for the flash.

Step.2. Get the descriptor of the attribute for the flash.

■Step.1. Get the size of the descriptor of the attribute for the flash.

The client must set the following member of NkMAIDGetSBAttrDesc.

- ulSBHandle : Specify the SBHandle to be acquisition target.
- ulSBAttrID : Specify the SBAttrID to be acquisition target.
- ulSize : Specify 0.

After getting value, the following members of NkMAIDGetSBAttrDesc are set.

- ulSize : The buffer size of descriptor of the attribute for the flash.

■Step.2. Get the descriptor of the attribute for the flash.

The client must set the following member of NkMAIDGetSBAttrDesc.

- After getting value, the following members of `NkMAIDGetSBAtrDesc` are set.

- ## Result Codes

### 3.226. SBAttrValue

<b>Capability</b>	kNkMAIDCapability_SBAttrValue
-------------------	-------------------------------

ulType	kNkMAIDCapType_Generic
--------	------------------------

<b>Data</b>	pointer to NkMAIDSBAttrValue structure
-------------	--

$$\{$$

ULONG   ulSBAttrID; -----0 : the value for all SBAttribute,  
  N : one of SBAttrID

ULONG ulSize;----- The size of pData.

```
void*  pData;----- The pointer of SBHandleAttributeList✖
```

```

} NkMAIDSBAttrValue, FAR* LPNkMAIDSBAttrValue;

```

### 3.226.1. *SBHandleAttributeList*

Field	DataSize	DataType or Data Set	Description
NumberOfElements	4	UINT32	The number of SBHandle in the list.
Element1 SBHandle	4	SBHandle	SBHandle for element1

Element1 SBAttributeList	DTS	Refer to <u>SBAttributeList</u>	SBAttributeList for element1.
Element2 SBHandle	4	SBHandle	SBHandle for element2.
Element2 SBAttributeList	DTS	Refer to <u>SBAttributeList</u>	SBAttributeList for element2.
...			
ElementN SBHandle	4	SBHandle	SBHandle for element N.
ElementN SBAttributeList	DTS	Refer to <u>SBAttributeList</u>	SBAttributeList for element N.

### 3.226.2. SBAttributeList

Field	Size (Byte)	DataType or Data Set	Description
NumberOfElements	4	UINT32	The number of the attribute in the list.
Element1 Attribute	DTS	Refer to <u>SBAttribute</u>	SBAttribute for element 1
Element2 Attribute	DTS	Refer to <u>SBAttribute</u>	SBAttribute for element 2
...			
ElementN Attribute	DTS	Refer to <u>SBAttribute</u>	SBAttribute for element N

### 3.226.3. SBAttribute

Field	Size (Byte)	DataType	Description
AttributeID	2	UINT16	SBAttrID or SBGroupAttrID
DataType	2	UINT16	Data type of the attribute The value varies depending on the attribute. Refer to <u>DataTypeCode</u>
GetSet	1	UINT8	Availability of Get and Set operation. 0x00: Only Get operation is available (Get) 0x01: Get and Set operation are available (Get / Set)
DefaultValue	DTS	DTS	The default value in the camera The value varies depending on the attribute.
CurrentValue	DTS	DTS	The current value in the camera The value varies depending on the attribute.
FormFlag	1	UINT8	Type of the descriptor 0x00: None 0x01: Range 0x02: Enumeration
FORM	DTS	DTS	The value in the field is depending on FormFlagfield. If FormFlag is 0, this field doesn't exist.

#### [In case of Get]

The client gets the attribute for the flash in the following procedure.

Step.1. Get the size of the current attribute value for the flash.

Step.2. Get the current attribute value for the flash.

If you want to run the Get after running the Set, it is necessary to always executed from Step 1.

■Step.1. Get the size of the current attribute value for the flash.

The client must set the following member of NkMAIDSBAttrValue.

- ulSBHandle : Specify the SBHandle to be acquisition target.
- ulSBAttrID : Specify the SBAttrID to be acquisition target.
- ulSize : Specify 0.

After getting value, the following members of NkMAIDSBAttrValue are set.

- ulSize : The buffer size of the current attribute value for the flash.

■Step.2. Get the current attribute value for the flash.

The client must set the following member of NkMAIDSBAttrValue.

- ulSBHandle : Specify the SBHandle to be acquisition target.
- ulSBAttrID : Specify the SBAttrID to be acquisition target.
- ulSize : Specify the size of pData (The buffer size for the acquisition to SBHandleAttributeDescList.)
- pData : Specify the pointer of SBHandleAttributeDescList.

After getting value, the following members of NkMAIDSBAttrValue are set.

- ulSize : The buffer size of SBAttributeList, which is set to pData.
- pData : SBAttributeList.

**[In case of Set]**

When the client sends kNkMAIDCapOperation\_Set, the client must set the following member of NkMAIDSBAttrValue.

- ulSBHandle : Not used in set.
- ulSBAttrID : Not used in set.
- ulSize : The size of SBAttributeList be set to pData. Specify the size of actual data size specified in pData.
- pData : The pointer of SBAttributeList.

The following cases, this Capability cannot be set into.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).

**Result Codes**

InvalidSBAttributeValue	The specified SB attribute value does not supported.
ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command. When valid SB information cannot be acquired.

### 3.227. GetSBGroupAttrDesc

This capability obtains the attribute descriptor for the flash group.

**Capability** kNkMAIDCapability\_GetSBGroupAttrDesc

**Object types** Source

**ulType** kNkMAIDCapType\_Generic

**ulOperations** kNkMAIDCapOperation\_Get

**Data** pointer to NkMAID GetSBGroupAttrDesc structure

```
typedef struct tag NkMAIDGetSBGroupAttrDesc
{
    ULONG    ulSBGroupID;-----0 : all flash group、 N : one of SBGroupID
                                   (one of eNkMAIDSBGroupID)
    ULONG    ulSBGroupAttrID; -- 0 : all SBGroupAttrID
                                   N : one of SBGroupAttrID
                                   (one of eNkMAIDSBGroupAttribute)
    ULONG    ulSize;----- The size of pData.
    void*    pData;----- The pointer of SBGroupAttributeDescList※
} NkMAIDGetSBGroupAttrDesc, FAR* LPNkMAIDGetSBGroupAttrDesc;
```

※The format of SBGroupAttributeDescList is shown at “[SBGroupAttributeDescList](#)”

#### 3.227.1. SBGroupAttributeDescList

Field	DataSize	Data Type or Data Set	Description
NumberOfElements	4	UINT32	The number of SBGroupID in the list.
Element1 SBGroupID	4	SBGroupID	SBGroupID for element1.
Element1 SBAttributeDescList	DTS	Refer to <a href="#">SBAttributeDescList</a>	Attribute descriptor for the element1 flash.
Element2 SBGroupID	4	SBGroupID	SBGroupID for element2.
Element2 SBAttributeDescList	DTS	Refer to <a href="#">SBAttributeDescList</a>	Attribute descriptor for the element2 flash.
...			
ElementN SBGroupID	4	SBGroupID	SBGroupID for element N.
ElementN SBAttributeDescList	DTS	Refer to <a href="#">SBAttributeDescList</a>	Attribute descriptor for the element N flash.

The client gets the descriptor of the attribute for the flash group in the following procedure.

Step.1. Get the size of the descriptor of the attribute for the flash group.

Step.2. Get the descriptor of the attribute for the flash group.

■Step.1. Get the size of the descriptor of the attribute for the flash group.

The client must set the following member of NkMAIDGetSBGroupAttrDesc.



- ulSBGroupID : Specify the SBGroupID to be acquisition target.
- ulSBGroupAttrID : Specify the SBGroupAttrID to be acquisition target.
- ulSize : Specify 0.

After getting value, the following members of NkMAIDGetSBGroupAttrDesc are set.

- ulSize : The buffer size of descriptor of the attribute for the flash group.

■Step.2. Get the descriptor of the attribute for the flash group.

The client must set the following member of NkMAIDGetSBGroupAttrDesc.

- ulSBGroupID : Specify the SBGroupID to be acquisition target.
- ulSBGroupAttrID : Specify the SBGroupAttrID to be acquisition target.
- ulSize : Specify the size of pData (The buffer size for the acquisition to SBGroupAttributeDescList.)
- pData : Specify the pointer of SBGroupAttributeDescList.

After getting value, the following members of NkMAIDGetSBGroupAttrDesc are set.

- ulSize : The buffer size of SBGroupAttributeDescList, which is set to pData.
- pData : SBGroupAttributeDescList.

\* When it is specified eNkMAIDSBGroupAttribute which does not support by the mounted flash, the value may be indefinite.

## Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.228. SBGroupAttrValue

This capability obtains or updates the current attribute value for the specified flash group.

**Capability** kNkMAIDCapability\_SBGroupAttrValue

**Object types** Source

**ulType** kNkMAIDCapType\_Generic

**ulOperations** kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_Set

**Data** pointer to NkMAIDSBGroupAttrValue structure

```
typedef struct tag NkMAIDSBGroupAttrValue
{
    ULONG    ulSBGroupID;-----0 : all flash group、 N : one of SBGroupID
                                   (one of eNkMAIDSBGroupID) ※Use only get
    ULONG    ulSBGroupAttrID; -----0 : all SBGroupAttrID, N : one of SBGroupAttrID
                                   (one of eNkMAIDSBGroupAttribute) ※Use only get
    ULONG    ulSize;----- The size of pData.
    void*    pData;----- The pointer of SBGroupAttributeList※
} NkMAIDSBGroupAttrValue, FAR* LPNkMAIDSBGroupAttrValue;
※The format of SBGroupAttributeList is shown at “SBGroupAttributeList”
```

#### 3.228.1. SBGroupAttributeList

Field	DataSize	Data Type or Data Set	Description
NumberOfElements	4	UINT32	The number of SBGroupID in the list.
Element1 SBGroupID	4	SBGroupID	SBGroupID for element1.
Element1 SBAttributeList	DTS	Refer to <u>SBAttributeList</u>	SBAttributeList for element1.
Element2 SBGroupID	4	SBGroupID	SBGroupID for element2.
Element2 SBAttributeList	DTS	Refer to <u>SBAttributeList</u>	SBAttributeList for element2.
...			
ElementN SBGroupID	4	SBGroupID	SBGroupID for element N.
ElementN SBAttributeList	DTS	Refer to <u>SBAttributeList</u>	SBAttributeList for element N.

#### [In case of Get]

The client gets the attribute for the flash group in the following procedure.

Step.1. Get the size of the current attribute value for the flash group.

Step.2. Get the current attribute value for the flash group.

If you want to run the Get after running the Set, it is necessary to always executed from Step 1.

■Step.1. Get the size of the current attribute value for the flash group.

The client must set the following member of NkMAIDSBGroupAttrValue.

- ulSBGroupID : Specify the SBGroupID to be acquisition target.

- ulSBGroupAttrID : Specify the SBGroupAttrID to be acquisition target.
- ulSize : Specify 0.

After getting value, the following members of NkMAIDSBGroupAttrValue are set.

- ulSize : The buffer size of the current attribute value for the flash group.

■Step.2. Get the current attribute value for the flash group.

The client must set the following member of NkMAIDSBGroupAttrValue.

- ulSBGroupID : Specify the SBGroupID to be acquisition target.
- ulSBGroupAttrID : Specify the SBGroupAttrID to be acquisition target.
- ulSize : Specify the size of pData (The buffer size for the acquisition to SBGroupIDAttributeDescList.)
- pData : Specify the pointer of SBGroupIDAttributeDescList.

After getting value, the following members of NkMAIDSBGroupAttrValue are set.

- ulSize : The buffer size of SBGroupAttributeList, which is set to pData.
- pData : SBGroupAttributeList.

\* When it is specified eNkMAIDSBGroupAttribute which does not support by the mounted flash, the value may be indefinite.

#### [In case of Set]

When the client sends kNkMAIDCapOperation\_Set, the client must set the following member of NkMAIDSBGroupAttrValue.

- ulSBGroupID : Not used in set.
- ulSBGroupAttrID : Not used in set.
- ulSize : The size of SBGroupAttributeList be set to pData. Specify the size of actual data size specified in pData.
- pData : The pointer of SBGroupAttributeList.

The following cases, this Capability cannot be set into.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).

#### Result Codes

InvalidSBAttributeValue	The specified SB attribute value does not supported.
ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.229. **TestFlash**

This capability makes the flash fire for testing.

Capability	kNkMAIDCapability_TestFlash
Object types	Source
ulType	kNkMAIDCapType_Generic
ulOperations	kNkMAIDCapOperation_Start
Data	pointer to NkMAIDTestFlash structure typedef struct tagNkMAIDTestFlash { ULONG    ulType;----- Flash mode Specify kNkMAIDTestFlash_Test. ULONG    ulParam;----- SBHandle for testing 0 : all flashes,  N : one of SBHandle } NkMAIDTestFlash, FAR* LPNkMAIDTestFlash;

The following case, this Capability cannot be started.

- The value of Capability\_SpotWBMode is 1(ON).

- Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
--------------	---

3.230. **ElectronicFrontCurtainShutter**

[Z 7] This will set “Electronic front-curtain shutter”.  
[Z 7\_FU1] This will set “Shutter type”. (Custom Setting Menu d5)  
[Z 7\_FU2, Z 7\_FU3] does not support this Capability.

Capability	kNkMAIDCapability_ElectronicFrontCurtainShutter
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set
Data	one of eNkMAIDElectronicFrontCurtainShutter [Z 7] <u>0: Disable</u> 1: Enable [Z 7_FU1] 0: Mechanical shutter

1: Electronic front-curtain shutter

2: Auto

In the following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M.
- When the Capability\_LiveViewPhotoShootingMode is 1(ON). (supported on only Z7\_FU1)

### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.231. CaptureAsync

This will take a picture and save the image to specified media.

**Capability** kNkMAIDCapability\_CaptureAsync

**Object types** Source

**ulType** kNkMAIDCapType\_Process

**ulOperations** kNkMAIDCapOperation\_Start

When the client runs this Capability, module returns control without waiting for the completion of the photographing operation. Therefore, for example, it is possible to check the state of the AE lock even during shooting. The result of this Capability is confirmed by Capability\_DeviceReady.

When the Capability\_ShootingMode is Continuous L or Continuous H, the maximum number of shots on continuous shooting mode is the smallest in value of the Capability\_RemainContinuousShooting or the remaining number of bracketing frame.

When the value of Capability\_HDRMode is other than “Off”, even if the Capability\_ShootingMode is continuous shooting, the frame of shooting is only one image.

When the module prepared to get a main image, the module issues kNkMAIDEvent\_AddChild to source object.

If the client executes this capability during 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.

Bulb exposure shooting can be executed when Capability\_ExposureMode is Manual and Capability\_ShutterSpeed is bulb. The bulb shooting is started by this capability and terminated by Capability\_TerminateCapture.

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

- When the value of Capability\_ShutterSpeed is “Time”.
- When the value of Capability\_RetractableLensWarningStatus is “True”.
- When the value of Capability\_SpotWBMode is “1(ON)”.
- When the value of Capability\_MovieLogOutput is 1(Outputting).

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
HardwareError	The error occurs on camera body.
MediaFull	If there is not free space in specified media
NoMedia	• If the card is under being formatted

	<ul style="list-style-type: none"> <li>• If no card is inserted and Capability_SaveMedia is "card", or "card and SDRAM".</li> <li>• When battery is low.</li> </ul>
InvalidMedia	If the card error has occurred on camera and Capability_SaveMedia is "card", or "card and SDRAM".
UnformattedMedia	If the card has unformatted and Capability_SaveMedia is "card", or "card and SDRAM".
MediaReadOnly	If the card is protected.
ApertureFEE	Aperture ring is not minimum.
BatteryDontWork	When battery is low.
ShutterBulb	Under bulb warning
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.232. **AFCaptureAsync**

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

- Capability** kNkMAIDCapability\_AFCaptureAsync
- Object types** Source
- ulType** kNkMAIDCapType\_Process
- ulOperations** kNkMAIDCapOperation\_Start

When the client runs this Capability, module returns control without waiting for the completion of the photographing operation. Therefore, for example, it is possible to check the state of the AE lock even during shooting.

The result of this Capability is confirmed by Capability\_DeviceReady.

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 depend on the setting of Capability\_FocusMode, Capability\_AFsPriolity, Capability\_AFcPriolity., and Capability\_LiveViewSelector.

When Capability\_LiveViewSelector is "1: movie live view", it always shifts to shooting operation irrespective of the state after AF driving. Since the camera is fixed “priority release”.

When the Capability\_ShootingMode is Continuous L or Continuous H, the maximun number of shots on continuous shooting mode is the smallest in value of the Capability\_RemainContinuousShooting or the remaining number of bracketing frame.

When the value of Capability\_HDRMode is other than “Off”, even if the Capability\_ShootingMode is continuous shooting, the frame of shooting is only one image.

When the module prepared to get a main image, the module issues kNkMAIDEvent\_AddChild to source object.

The media saved an image is specified by Capability\_SaveMedia.

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

- The value of Capability\_SpotWBMode is 1(ON).
- When the value of Capabilty\_ShutterSpeed is “Time”.
- When the value of Capabilty\_RetractableLensWarningStatus is “True”.
- When the value of Capabilty\_MovieLogOutput is 1(Outputting).

**Result Codes**

OutOfFocus	When the following all conditions are met. <ul style="list-style-type: none"><li>• AF mode of operation is the focus priority.</li><li>• The AF operation is out-of-focus,</li><li>• The value of Capability_LiveViewSelector is “0: live view</li></ul>
------------	--



	photography”.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
HardwareError	The error occurs on camera body.
MediaFull	If there is not free space in specified media
NoMedia	<ul style="list-style-type: none"> <li>• If the card is under being formatted</li> <li>• If no card is inserted and Capability_SaveMedia is "card", or "card and SDRAM".</li> <li>• When battery is low.</li> </ul>
InvalidMedia	If the card error has occurred on camera and Capability_SaveMedia is "card", or "card and SDRAM".
UnformattedMedia	If the card has unformatted and Capability_SaveMedia is "card", or "card and SDRAM".
MediaReadOnly	If the card is protected.
ApertureFEE	Aperture ring is not minimum.
BatteryDontWork	When battery is low.
ShutterBulb	Under bulb warning.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.233. DeviceReady

This will check the status of Capture\_CaptureAsync, Capability\_AFCaptureAsync.

**Capability** kNkMAIDCapability\_DeviceReady

**Object types** Source

**ulType** kNkMAIDCapType\_Process

**ulOperations** kNkMAIDCapOperation\_Start

The Capability is used to check the operating status of Capability\_CaptureAsync or Capability\_AFCaptureAsync.

For example, if the Client wants to check the status of the AE locked during shooting, starts shooting by Capability\_CaptureAsync, and gets the state of the AE lock in Capability\_LockExposure, the operating result of Capability\_CaptureAsync is obtained by this Capability.

### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
OutOfFocus	If auto focus failed by Capability_CaptureAsync or Capability_AFCaptureAsync

DeviceBusy	<ul style="list-style-type: none"> <li>• If the camera is in the Busy state.</li> <li>• During the camera is operating by Capability_CaptureAsync or Capability_AFCaptureAsync</li> </ul>
MFDriveEnd	If the focus position reached the end of focus area.
BulbReleaseBusy	During bulb exposure shooting.
CaptureFailure	If the measuring white balance is failed.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.234. ElectronicVR

This will set “Electric VR”. (Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_ElectronicVR
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDElectronicVR <u>0: OFF</u> 1: ON

This capability is used for movie recording only.

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).
- The value of Capability\_MovieScreenSize is “15 : 1920x1080 30p x4(slow-mo)”, “16 : 1920x1080 25p x4(slow-mo)”, “17 : 1920x1080 24p x5(slow-mo)”, “18 : 1920x1080 120p” or “19 : 1920x1080 100p”,

### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.235. **MovieActive\_D\_Lighting**

This will set “Active D-Lighting”. (Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieActive_D_Lighting
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
<b>Data</b>	one of eNkMAIDMovieActive_D_Lighting

<u>0 : Off</u>
1 : Low
2 : Normal
3 : High
4 : Extra high
5 : Same as photo settings

This capability operates in a setting of Capability\_Active\_D\_Lighting, when it is set to "5 : Same as photo settings ". This capability operates in "2 : Normal ", when the setting of Capability\_Active\_D\_Lighting is "6 : Auto ".

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M.
- The value of Capability\_MovieLogOutput is 1(Outputting)

#### **Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.236. **FlickerReductionSetting**

This will set “Flicker reduction shooting”(Photo Shooting Menu).

<b>Capability</b>	kNkMAIDCapability_FlickerReductionSetting
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
<b>Data</b>	one of eNkMAIDFlickerReductionSetting

<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).
- The value of Capability\_ExposureDelayEx is except “3 : Off”
- The value of Capability\_HDRMode is except 0(OFF).
- The value of Capability\_LiveViewPhotoShootingMode is 1(ON).

#### **Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.237. **SBIntegrationFlashReady**

This will get the information about the ready state of the external flash displayed in the flash info of the INFO display.

<b>Capability</b>	kNkMAIDCapability_SBIntegrationFlashReady
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray
<b>Data</b>	one of eNkMAIDSBIntegrationFlashReady <u>0: Uncharged</u> 1: Ready

### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.238. ExternalRecordingControl

This will set “HDMI - External recording control”. (SETUP)

Capability	kNkMAIDCapability_ExternalRecordingControl
Object types	Source
ulType	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
Data	one of eNkMAIDExternalRecordingControl <u>0: OFF</u> 1: ON

In the following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).

### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.239. LiveViewPhotoShootingMode

This will set “Silent photography”. (Photo Shooting Menu)

Capability	kNkMAIDCapability_LiveViewPhotoShootingMode
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set
Data	one of eNkMAIDLiveViewPhotoShootingMode <u>0: OFF</u>

1: ON

In the following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

#### 3.240. DetectionPeaking

This will set the peaking level to be used in live view (Custom Setting Menu d10).

<b>Capability</b>	kNkMAIDCapability_DetectionPeaking
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDDetectionPeaking <u>0: OFF</u> 1: Low sensitivity 2: Standard 3: High sensitivity

In the following case, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.241. HighlightBrightness

This will set “Highlight brightness”. (Custom Setting Menu g6)

<b>Capability</b>	kNkMAIDCapability_HighlightBrightness
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDHighlightBrightness 0: 180 1: 191 2: 202 3: 213 4: 224 5: 235 <u>6: 248</u> 7: 255

In the following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M.
- The value of Capability\_ DetectionPeaking is except 0(OFF).

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.242. MovieAttenuator

This will set “Attenuator”. (Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieAttenuator
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDMovieAttenuator <u>0: Disable</u> 1: Enable

In the following cases, this Capability is read only.

- During movie file recording and the value of Capability\_MovieRecMicrophone is “4: Microphone off”.
- The value of Capability\_SpotWBMode is 1(ON).
- The value of Capability\_MovieScreenSize is “15 : 1920x1080 30p x4(slow-mo)”, “16 : 1920x1080 25p x4(slow-mo)” or “17 : 1920x1080 24p x5(slow-mo)”,

### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.243. SaveCameraSetting

Save camera settings

<b>Capability</b>	kNkMAIDCapability_SaveCameraSetting
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Process
<b>ulOperations</b>	kNkMAIDCapOperation_Start
<b>Data</b>	None

Operation by this Capability is the same function as the saving the camera setting when the power switch is turned off.

The setting values are stored in the nonvolatile area of the camera. However, if the operation of the camera cannot be completed, the operation of the camera will not be guaranteed thereafter.

After operating this Capability, it's necessary that SourceObject is closed. And the other Capability cannot be operated, and the camera operations other than camera power OFF should not be performed.

The following cases, the Visibility of this capability is invalid and the Operations are invalid.

- During movie file recording.
- When the value of Capability\_LockCamera is False:Unlock(PC-camera mode)

### Result Codes

NotSupported	<ul style="list-style-type: none"><li>• If you run the Operation that it is not supported against Capability.</li><li>• If the setting of the camera cannot be saved.</li></ul>
DeviceBusy	If the camera is in the Busy state.(included during shooting)
UnexpectedError	By the unexpected error, if it fails to execute the command.



### 3.244. **MovieFileType**

This will set movie file type. (Movie Shooting Menu)

<b>Capability</b>	kNkMAIDCapability_MovieFileType
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDMovieFileType <u>0: MOV</u> 1: MP4

In the following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).

#### **Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.245. **InternalFlashComp**

This will set “Frash compensation” in units of 1/6 EV (Photo Shooting Menu).

<b>Capability</b>	kNkMAIDCapability_InternalFlashComp
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Range
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set
<b>Data</b>	-3.0EV~+1.0EV (Default:0EV)

The unit of the value of this Capability depends on the value of Capability\_EVInterval.

In the following cases, this Capability is read only.

- The value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.
- When Capability\_HDRMode is 1: On (single photo) or 2: On (series).

- When the exposure mode are setting except P, S, A, and M.
- When the value of Capability\_ShootingMode is 11”Continuous H(extended)”.
- During the warning of SB setting.

## Result Codes

ValueOutOfBounds	<ul style="list-style-type: none"> <li>• If an out-of-range value has been set.</li> <li>• If the value that cannot set is set to this capability according to the EVInterval setting.</li> </ul>
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.246. **GetRecordingInfo**

This will get the information of movie recording.

<b>Capability</b>	kNkMAIDCapability_GetRecordingInfo
<b>Object types</b>	Video
<b>ulType</b>	kNkMAIDCapType_Generic
<b>ulOperations</b>	kNkMAIDCapOperation_Get
<b>Data</b>	pointer to NkMAIDGetRecordingInfo structure typedef struct tagNkMAIDGetRecordingInfo { ULONG    ulIndexOfMov;    --- Index of the target movie file ULONG    ulTotalMovCount; --- The number of divided movie files NK_UINT_64  ullTotalMovSize;    ---- Total size of all divided movie files } NkMAIDGetRecordingInfo, FAR* LPNkMAIDGetRecordingInfo;

Movie recording information of the target VideoObject is acquired by this Capability.

In the case of the movie file size is over 4GBytes, it is able to get the following information by this capability.

- Index of the target movie file
- The number of divided movie files
- Total size of all divided movie files

Example:

1st file ... 4GB

2nd file ... 2GB

The results that is recorded 6GB movie in total,

\* 1st VideoObject

ulIndexOfMov = 0

ulTotalMovCount = 2

ullTotalMovSize = 6442450944 (6GB)

\* 2nd VideoObject

ulIndexOfMov = 1

ulTotalMovCount = 2

ullTotalMovSize = 6442450944 (6GB)

If movie file is not divided, ulIndexOfMov = 0, ulTotalMovCount = 1 is returned. Also, movie file size of target VideoObject is returned as ullTotalMovieSize.

If it wants to get the size of each divided movie file, Capability\_GetVideoImageEx can be used.

### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

#### 3.247. DiffractionCompensation

This will set “Diffraction compensation” of Photo Shooting Menu.

Capability	kNkMAIDCapability_DiffractionCompensation
Object types	Source
ulType	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
Data	one of eNkMAIDDiffractionCompensation 0: OFF <u>1: ON</u>

The following cases, this Capability is read only.

- When the value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

#### 3.248. VibrationReduction

This will set “Vibration reduction” of Photo Shooting Menu.

Capability	kNkMAIDCapability_VibrationReduction
Object types	Source
ulType	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
Data	one of eNkMAIDVibrationReduction

- 0: OFF
- 1: Normal
- 2: Sport

The value supported by this Capability is different depending on type of lens attached to the camera.

The following cases, this Capability is read only.

- When the value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.
- When the lens attached to the camera has VR switch.
- When Capability\_LensType indicate 0(not CPU lens) and Capability\_ FmmManual is 0(No setting).
- When the ML-lens attached to the camera has VR function.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

#### 3.249. MovieAutoDistortion

This will set “Auto distortion control” of Movie Shooting Menu.

<b>Capability</b>	kNkMAIDCapability_MovieAutoDistortion
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDMovieAutoDistortion 0: OFF <u>1: ON</u>

The following cases, this Capability is read only.

- When the value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.
- When Capability\_LensType indicates 0x00000080(Always correct distortion)

## Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.250. MovieAfAreaMode

This will set “AF-area mode” of Movie Shooting Menu.

<b>Capability</b>	kNkMAIDCapability_MovieAfAreaMode
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set

#### Data

Menu	String	Capability_MovieFocusMode
Single-point AF	“Single”	MF, AF-S, AF-C, AF-F
<u>Auto-area AF</u>	“Auto”	AF-S, AF-C, AF-F
wide-area AF(S)	“Wide(S)”	AF-S, AF-C, AF-F
wide-area AF(L)	“Wide(L)”	AF-S, AF-C, AF-F

If AF-area mode can't set or use depending on the value of Capability\_MovieFocusMode, this Capability will be set Single-point AF. If AF-area mode can set and use depending on the value of Capability\_MovieFocusMode, this Capability will be set the previous value.

The value of this Capability is not the setting value of the menu but the control value.

※Regarding Enum Value: A value included in the enum value can be set as one of menu value. However it may not be controlled by the state of the camera in the set value. In this case, immediately after setting this capability value, CapChange is issued. The value gotten by kNkMAIDCapOperation\_Get becomes the control value.( The value of this Capability may not match the value of the menu.)

The following cases, this Capability is read only.

- When the value of Capability\_SpotWBMode is 1(ON).
- When Capability\_MovieFocusMode is set to MF by user operation.

1. Change Capability\_MovieFocusMode by using module
2. Change FocusMode from Movie Shooting Menu of the camera
3. Change FocusMode from i-menu of the camera  
during movie live view.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

#### 3.251. MovieVibrationReduction

This will set “Vibration reduction” of Movie Shooting Menu

<b>Capability</b>	kNkMAIDCapability_MovieVibrationReduction
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDMovieVibrationReduction 0: OFF 1: Normal 2: Sport <u>100: Same as photo setting</u>

The value supported by this Capability is different depending on type of lens attached to the camera.

The following cases, this Capability is read only.

- When the value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.
- When the lens attached to the camera has VR switch.
- When Capability\_LensType indicate 0(not CPU lens) and Capability\_FmmManual is 0(No setting)
- When the ML-lens attached to the camera has VR function.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
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NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.252. MovieFocusMode

This will set the focus mode for movie (Movie Shooting Menu).

<b>Capability</b>	kNkMAIDCapability_MovieFocusMode
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDMovieFocusMode 0: AF-S 1: AF-C <u>2: AF-F</u> 4: MF

The value of this Capability is not the setting value of the menu but the control value.

※Regarding Enum Value: A value included in the enum value can be set as one of menu value. However it may not be controlled by the state of the camera in the set value. In this case, immediately after setting this capability value, CapChange is issued. The value gotten by kNkMAIDCapOperation\_Get becomes the control value.( The value of this Capability may not match the value of the menu.)

The following case, this Capability is read only.

- When the value of Capability\_SpotWBMode is 1(ON).

### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.



### 3.253. **MovieVignetteControl**

This will set “Vignette control” of Movie Shooting Menu.

<b>Capability</b>	kNkMAIDCapability_MovieVignetteControl
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDMovieVignetteControl 0: OFF 1: Low <u>2: Normal</u> 3: High 100: Same as photo setting

The following cases, this Capability is read only.

- When the value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

#### **Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.254. **MovieDiffractionCompensation**

This will set “Diffraction compensation” of Movie Shooting Menu.

<b>Capability</b>	kNkMAIDCapability_MovieDiffractionCompensation
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDMovieDiffractionCompensation 0: OFF <u>1: ON</u>

The following cases, this Capability is read only.

- When the value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

#### 3.255. RecordTimeCodes

This will set “Timecode – Record timecodes” of Movie Shooting Menu.

<b>Capability</b>	kNkMAIDCapability_RecordTimeCodes
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDRecordTimeCodes <u>0: OFF</u> 1: ON 2: ON(With HDMI external output)

The following cases, this Capability is read only.

- When the value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.
- When a warning is occurring about time is not set.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

#### 3.256. CountUpMethod

This will set “Timecode - Count-up method” of Movie Shooting Menu.

<b>Capability</b>	kNkMAIDCapability_CountUpMethod
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<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDCountUpMethod <u>0: Record run</u> 1: Free run

The following cases, this Capability is read only.

- When the value of Capability\_RecordTimeCodes is 0(OFF).
- When the value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.
- When a warning is occurring about time is not set.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

#### 3.257. TimeCodeOrigin

This will set "Timecode - Timecode origin" of Movie Shooting Menu

<b>Capability</b>	kNkMAIDCapability_TimeCodeOrigin
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Generic
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set
<b>Data</b>	pointer to NkMAIDTimeCodeOrigin structure typedef struct tagNkMAIDTimeCodeOrigin { UCHAR  ucTimeCodeInfo;  ----- 0 : Reset / 1 : Enter Manually / <u>2 : Current Time</u> UCHAR  ucTimeCode[3];  ----- [0]Hour(00-23)  (Default : 0) [1] Minute(00-59)  (Default : 0) [2] Second(00-59)  (Default : 0) ULONG  ulFrame;          ----- Frame (*)  (Default : 0) In the case of 24fps(0-23)

In the case of 25/50/100fps(0-24)

In the case of 30/60/120fps(0-29)

} NkMAIDTimeCodeOrigin, FAR\* LPNkMAIDTimeCodeOrigin;

(\*)The range of values that can be set changes depending on the Frame rate of Capability\_MovieScreenSize.

ucTimeCode[3] and ulFrame is used only when ucTimeCodeInfo is “1 : Enter Manually”

The following cases, this Capability is read only.

- When the value of Capability\_RecordTimeCodes is 0(OFF).
- When the value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.
- When a warning is occurring about time is not set.

### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.258. DropFrame

This will set “Timecode - Drop frame” of Movie Shooting Menu

**Capability** kNkMAIDCapability\_DropFrame  
**Object types** Source  
**ulType** kNkMAIDCapType\_Enum  
kNkMAIDArrayType\_Unsigned  
**ulOperations** kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_GetArray,  
kNkMAIDCapOperation\_Set  
**Data** one of eNkMAIDDropFrame  
0: OFF  
1: ON

The following cases, this Capability is read only.

- When the value of Capability\_RecordTimeCodes is 0(OFF).
- When the value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.
- When a warning is occurring about time is not set.

### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.259. MovieLogOutput

This will get the state of N-Log control.

<b>Capability</b>	kNkMAIDCapability_MovieLogOutput
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray
<b>Data</b>	one of eNkMAIDMovieLogOutput <u>0: Not outputting</u> 1: Outputting

### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.260. MovieLogSetting

This will set “HDMI - N-Log setting” of Setup Menu

<b>Capability</b>	kNkMAIDCapability_MovieLogSetting
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDMovieLogSetting <u>0: OFF</u> 1: ON(Can't be card recording )

The following cases, this Capability is read only.

- When the value of Capability\_HDMIOutputDataDepth is 0(8bit).
- When the value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

#### 3.261. **HDMIOutputDataDepth**

This will set “HDMI - Output data depth” of Setup Menu

<b>Capability</b>	kNkMAIDCapability_HDMIOutputDataDepth
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDHDMIOutputDataDepth <u>0: 8bit</u> 1: 10bit

The following cases, this Capability is read only.

- When the value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

#### 3.262. **LowLightAF**

This will set the setting of “Low-light AF”. (Custom setting menu a11)

<b>Capability</b>	kNkMAIDCapability_LowLightAF
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set

**Data**                    one of eNkMAIDLowLightAF  
                              0: OFF  
                              1: ON

The following cases, this Capability is read only.

- When the exposure mode are setting except P, S, A, and M.
- When the value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.263.            **ApplyLiveViewSetting**

This will set the Apply settings to live view (Custom setting menu d8).

**Capability**            kNkMAIDCapability\_ApplyLiveViewSetting  
**Object types**        Source  
**ulType**                kNkMAIDCapType\_Enum  
                              kNkMAIDArrayType\_Unsigned  
**ulOperations**        kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_GetArray,  
                              kNkMAIDCapOperation\_Set  
**Data**                    one of eNkMAIDApplyLiveViewSetting  
                              0: OFF  
                              1: ON

The following cases, this Capability is read only.

- When the value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.

UnexpectedError	By the unexpected error, if it fails to execute the command.
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### 3.264. LiveViewImageStatus

This will get the state of the live view image to be acquired with Capability\_GetLiveViewImage.

<b>Capability</b>	kNkMAIDCapability_LiveViewImageStatus
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray
<b>Data</b>	one of eNkMAIDLIVEViewImageStatus <u>0</u> : Live view image can't be acquired 1: Live view image can be acquired

#### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.265. LiveViewZoomArea

This will set the zoom area of live view image.

<b>Capability</b>	kNkMAIDCapability_LiveViewZoomArea
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDLIVEViewZoomArea

eNkMAIDLIVEViewZoomArea	Display device		Contents
	Tilting monitor	Viewfinder	
<u>0</u>	○	○	full screen
512	○	—	MagnifyRange : 512 x 342 Magnification : High(200%)



640	—	○	MagnifyRange : 640 x 426 Magnification : High(200%)
1024	○	—	MagnifyRange : 1024 x 682 Magnification : actual (100%)
1280	—	○	MagnifyRange : 1280 x 854 Magnification : actual (100%)
2048	○	—	MagnifyRange : 2048 x 1364 Magnification : Low(50%)
2560	—	○	MagnifyRange : 2560 x 1706 Magnification : Low(50%)

※The magnification is the magnification relative to the size of the display device.

Magnifiable enumeration value changes depending on the display device. If it is set the value that the display device does not support, the magnification is enlarged to the equally enlargement range.

The value of this Capability does not change even if the display device is changed.

The specifications of camera show that the camera can not be set such that the vertical and horizontal size (※) of the zoom range is larger than the vertical and horizontal size of the live view whole image.

In this camera, there is no value that can not be set as described above.

In the following case, 「512: 512 x 342」 「640: 640 x 426」 is not enumerated

- When the value of Capability\_SpotWBMode is 1(ON)

The following cases, this Capability is read only.

- When the value of Capability\_LiveViewStatus is 0(OFF).
- During movie file recording.

## Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	<ul style="list-style-type: none"> <li>• If you run the Operation that it is not supported against Capability.</li> <li>• If you changed the value of this Capability during Photo Shooting.</li> </ul>



There is not a detected face at the specified coordinates	Waiting Selecting Tracking	Tracking	Specified coordinates	-
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The following cases, this Capability is read only.

- When the value of Capability\_LiveViewStatus is except “3(ON(remote live view ))”
- When the value of Capability\_FocusAreaMode is except ”Auto” and live view photography is starting.
- When the value of Capability\_MovieFocusAreaMode is except ”Auto” and movie live view\_ is starting.
- When the value of Capability\_SpotWBMode is not “1(ON)”

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
NotLiveView	If live view does not be started.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.267. MovieAfSpeed

This will set “AF speed” (Custom setting menu g4).

<b>Capability</b>	kNkMAIDCapability_MovieAfSpeed
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Range
<b>ulOperations</b>	kNkMAIDCapOperation_Get,kNkMAIDCapOperation_Set
<b>Data</b>	-5(low speed)~5(high speed)(Default:0)

The following cases, this Capability is read only.

- When the value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.268. MovieAfSpeedWhenToApply

This will set “AF speed - When to apply” (Custom setting menu g4).

<b>Capability</b>	kNkMAIDCapability_MovieAfSpeedWhenToApply
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDMovieAfSpeedWhenToApply <u>0 : Always active</u> 1 : Active only during recording

The following cases, this Capability is read only.

- When the value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.269. MovieAfTrackingSensitivity

This will set “AF tracking sensitivity” (Custom setting menu g5).

<b>Capability</b>	kNkMAIDCapability_MovieAfTrackingSensitivity
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Range
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set
<b>Data</b>	1(sensitive)~7(insensitive) (Default:4)

The following cases, this Capability is read only.

- When the value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.270.           **PreCapture**

This will take a picture for the presetting white balance.

<b>Capability</b>	kNkMAIDCapability_PreCapture
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Process
<b>ulOperations</b>	kNkMAIDCapOperation_Start
<b>Data</b>	None

This capability is used for white balance for still image.

The following cases, the Visibility of this capability is invalid and the Operations are invalid.

- When the value of Capability\_ShutterSpeed is “Time”.
- When the value of Capability\_LiveViewSelector is “1(Movie live view)”.
- When the value of Capability\_RetractableLensWarningStatus is "True".
- When the value of Capability\_HDRMode is except “Off”.
- When the value of Capability\_MovieLogOutput is “1(Outputting)”

### **Result Codes**

CaptureFailure	If the measuring white balance is failed.
NotSupported	<ul style="list-style-type: none"> <li>• If you run the Operation that it is not supported against Capability.</li> <li>• If the value of Capability_LockCamera is “False”.</li> </ul>
DeviceBusy	If the camera is in the Busy state.
HardwareError	The error occurs on camera body.
MediaFull	If there is not free space in specified media.
NoMedia	<ul style="list-style-type: none"> <li>• Recording card is initializing.</li> <li>• Capability_SaveMedia is "card" or "card and SDRAM" and then the recording card does not exist.</li> <li>• When battery is low.</li> </ul>
InvalidMedia	Capability_SaveMedia is "card" or "card and SDRAM" and then the card access error has occurred in the camera.
UnformattedMedia	Capability_SaveMedia is "card" or "card and SDRAM" and then the card is not formatted.
MediaReadOnly	If the card is protected.
ApertureFEE	Aperture ring is not minimum.
BatteryDontWork	When battery is low.
ShutterBulb	Under bulb warning
UnexpectedError	By the unexpected error, if it fails to execute the command.

This will get “Non-CPU lens data” of Setup Menu

Object types	Source
--------------	--------

- ulOperations
- kNkMAIDCapOperation\_Get

```
typedef struct tagGetManualSettingLensData
```

LPNkMAIDGetManualSettingLensData;

Get by the following procedure.

1. Get the size to get the current value.
2. Get the current value of lens setting information.

- 1. Get the size to get the current value.

- ulLensID : Set the Lens ID to be getted
- ulSize : Set to 0

- ulSize : Size for getting current value of LensID

- 2. Get the current value of lens setting information.

- ulLensID : Set the Lens ID to be getted
- ulSize : Data size of pData
- pData : Data pointer for getting

- pData : ManualSettingLens DataSet

ValueOutOfBounds	If an invalid value has been set.
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NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.271.1. ManualSettingLens DataSet

Field	Size	Description
Setting lens No.	4	Refer to <u>ManualSettingLensNo</u>
The number of lens data (N)	4	Get the specified lens data: 1/ Get all lens data: 20
Manual setting lens data [0]	Focal Length	1
	Maximum aperture	1
	Reserved	2
Manual setting lens data [1]	Focal Length	1
	Maximum aperture	1
	Reserved	2
Manual setting lens data [N - 1]	Focal Length	1
	Maximum aperture	1
	Reserved	2

### 3.272. AFModeAtLiveView

This will set the Focus mode of the Photo Shooting Menu.

<b>Capability</b>	kNkMAIDCapability_AFModeAtLiveView
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDAFModeAtLiveView 0: AF-S 1: AF-C 4: MF

The value of this Capability is not the setting value of the menu but the control value.

※Regarding Enum Value: A value included in the enum value can be set as one of menu value. However it may not be controlled by the state of the camera in the set value. In this case, immediately after setting this capability value, CapChange is issued. The value gotten by kNkMAIDCapOperation\_Get becomes the control value.( The value of this Capability may not match the value of the menu.)

The following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).

## Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.



### 3.273. **ElectronicFrontCurtainShutterEx**

This will set “Shutter type”. (Custom Setting Menu d5)

[Z 7, Z 7\_FU1] does not support this Capability.

<b>Capability</b>	kNkMAIDCapability_ElectronicFrontCurtainShutterEx
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDElectronicFrontCurtainShutter 0: Mechanical shutter 1: Electronic front-curtain shutter <u>2: Auto</u>

The enumeration varies depending on the lens to be mounted.

When a lens that does not support a mechanical shutter is attached, 0: Mechanical shutter is not included in the enumeration.

In the following cases, this Capability is read only.

- During movie file recording.
- The value of Capability\_SpotWBMode is 1(ON).
- When the exposure mode are setting except P, S, A, and M.
- When the Capability\_LiveViewPhotoShootingMode is 1(ON).

#### **Result Codes**

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 3.274. LiveViewImageCompression

This will set the image quality of the live view image acquired in Capability\_GetLiveViewImage.

<b>Capability</b>	kNkMAIDCapability_LiveViewImageCompression
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDArrayType_Unsigned kNkMAIDCapType_Enum
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
<b>Data</b>	one of eNkMAIDLiveViewImageCompression <u>0: BASIC (Size priority)</u> 1: BASIC (Image quality priority) 2: NORMAL (Size priority) 3: NORMAL (Image quality priority) 4: FINE (Size priority) 5: FINE (Image quality priority)

When the camera is connected and it's possible to set this Capability, the Module sets “5: FINE (Image quality priority)” to this Capability.

The following cases, this Capability is read only.

- When the value of Capability\_SpotWBMode is 1(ON).
- During movie file recording.

#### Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

## 4. SB definition

### 4.1. SBHandle

The SBHandle is used for identifying the flashes (the internal flash, external flash or other flash units).

The SBHandle takes an unsigned 32-bit value, and the unique number is assigned to each flash.

#### 4.1.1. eNkMAIDSBHandle

eNkMAIDSBHandle	ID	Description
kNkMAIDSBHandle_ALL	0	All flashes

### 4.2. eNkMAIDSBGroupID

eNkMAIDSBGroupID	ID	Description
kNkMAIDSBGroupID_ALL	0	All flash group
kNkMAIDSBGroupID_Master	0x00000001	Master flash
kNkMAIDSBGroupID_A	0x00000002	Group A
kNkMAIDSBGroupID_B	0x00000004	Group B
kNkMAIDSBGroupID_C	0x00000008	Group C
kNkMAIDSBGroupID_D	0x00000010	Group D
kNkMAIDSBGroupID_E	0x00000020	Group E
kNkMAIDSBGroupID_F	0x00000040	Group F

### 4.3. eNkMAIDSBAttribute

eNkMAIDSBAttribute	ID	Description
kNkMAIDSBAttribute_ALL	0	All SBAttrID
kNkMAIDSBAttribute_Name	0x1001	This indicates the string to express the name or the nickname of the remote flash.
kNkMAIDSBAttribute_GroupID	0x1002	This indicates the SBGroupID of the flash.
kNkMAIDSBAttribute_Status	0x1003	This indicates the ready state of the remote flash.
kNkMAIDSBAttribute_TestFlashDisable	0x1005	This indicates the disabled state for the test firing of the flash.

#### 4.4. eNkMAIDSBGroupAttribute

eNkMAIDSBGroupAttribute	ID	Description
kNkMAIDSBGroupAttribute_ALL	0	All SBGroupAttrID
kNkMAIDSBGroupAttribute_FlashMode	0x4001	This indicates the flash mode of the flash group.
kNkMAIDSBGroupAttribute_FlashCompensation	0x4002	This indicates the flash group compensation value in units of 1/6 EV.
kNkMAIDSBGroupAttribute_FlashRatio	0x4003	This indicates the ratio of the flash group.
kNkMAIDSBGroupAttribute_FlashLevel	0x4004	This indicates the flash level of the flash group.
kNkMAIDSBGroupAttribute_FlashRange	0x4005	This indicates the distance of the flash group.
kNkMAIDSBGroupAttribute_Repeat	0x4006	This indicates the repeat setting of the flash group.
kNkMAIDSBGroupAttribute_RepeatCount	0x4007	This indicates the firing count of the flash group.
kNkMAIDSBGroupAttribute_RepeatInterval	0x4008	This indicates the repeat interval of the flash group.
kNkMAIDSBGroupAttribute_Invalid	0x4009	This indicates the valid state of the flash group.

## 5. Standard Capabilities

### 5.1. AsyncRate

<b>Capability</b>	kNkMAIDCapability_AsyncRate
<b>Object types</b>	Module
<b>ulType</b>	kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get

### 5.2. ProgressProc

<b>Capability</b>	kNkMAIDCapability_ProgressProc
<b>Object types</b>	Source, Image, Thumbnail
<b>ulType</b>	kNkMAIDCapType_Callback
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

### 5.3. EventProc

<b>Capability</b>	kNkMAIDCapability_EventProc
<b>Object types</b>	Module, Source, Item, Image, Thumbnail
<b>ulType</b>	kNkMAIDCapType_Callback
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

### 5.4. DataProc

<b>Capability</b>	kNkMAIDCapability_DataProc
<b>Object types</b>	Image, Thumbnail
<b>ulType</b>	kNkMAIDCapType_Callback
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

### 5.5. UIRequestProc

<b>Capability</b>	kNkMAIDCapability_UIRequestProc
<b>Object types</b>	Module
<b>ulType</b>	kNkMAIDCapType_Callback
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

### 5.6. IsAlive

<b>Capability</b>	kNkMAIDCapability_IsAlive
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<b>Object types</b>	Module, Source, Item, Image, Thumbnail,
<b>ulType</b>	kNkMAIDCapType_Boolean
<b>ulOperations</b>	kNkMAIDCapOperation_Get

### 5.7. Children

<b>Capability</b>	kNkMAIDCapability_Children
<b>Object types</b>	Module, Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray

### 5.8. State

<b>Capability</b>	kNkMAIDCapability_State
	Not supported

### 5.9. Name

<b>Capability</b>	kNkMAIDCapability_Name
<b>Object types</b>	Module, Source, Item, Image, Thumbnail, Video
<b>ulType</b>	kNkMAIDCapType_String
<b>ulOperations</b>	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.

### 5.10. Description

<b>Capability</b>	kNkMAIDCapability_Description
	Not supported

### 5.11. Interface

<b>Capability</b>	kNkMAIDCapability_Interface
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_String
<b>ulOperations</b>	kNkMAIDCapOperation_Get

#### 5.12. DataTypes

<b>Capability</b>	kNkMAIDCapability_DataTypes
<b>Object types</b>	Source, Item
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get

#### 5.13. DateTime

<b>Capability</b>	kNkMAIDCapability_DateTime
<b>Object types</b>	Item
<b>ulType</b>	kNkMAIDCapType_DateTime
<b>ulOperations</b>	kNkMAIDCapOperation_Get

#### 5.14. StoredBytes

<b>Capability</b>	kNkMAIDCapability_StoredBytes
<b>Object types</b>	Item, Image, Thumbnail
<b>ulType</b>	kNkMAIDCapType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get

#### 5.15. Eject

<b>Capability</b>	kNkMAIDCapability_Eject
	Not supported

#### 5.16. Feed

<b>Capability</b>	kNkMAIDCapability_Feed
	Not supported

### 5.17. 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 Continuous L or Continuous H, the maximum number of shots on continuous shooting mode is the smallest in value of the

Capability\_RemainContinuousShooting or the remaining number of bracketing frame.

When the value of Capability\_HDRMode is other than “Off”, even if the Capability\_ShootingMode is continuous shooting, the frame of shooting is only one image.

When the module prepared to get a main image, the module issues

kNkMAIDEvent\_AddChild to source object.

If the client executes this capability during 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 no free space in the specified media, kMAIDResult\_MediaFull will return.

Bulb exposure shooting can be executed when Capability\_ExposureMode is Manual and Capability\_ShutterSpeed is bulb.

The bulb shooting is started by this capability and terminated by Capability\_TerminateCapture.

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

- When the value of Capability\_ShutterSpeed is “Time”.
- When the value of Capability\_RetractableLensWarningStatus is “True”.
- When the value of Capability\_SpotWBMode is “1(ON)”.
- When the value of Capability\_MovieLogOutput is “1(Outputting)”.

### Result Codes

NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
HardwareError	The error occurs on camera body.
MediaFull	• If there is not free space in specified media
NoMedia	• If the card is under being formatted or no card is inserted and Capability_SaveMedia is "card", or "card and SDRAM". • When battery is low.
InvalidMedia	If the card error has occurred on camera and Capability_SaveMedia is "card", or "card and SDRAM".
UnformattedMedia	If the card has unformatted and Capability_SaveMedia is



	"card", or "card and SDRAM".
MediaReadOnly	If the card is protected.
ApertureFEE	Aperture ring is not minimum.
BatteryDontWork	When battery is low.
ShutterBulb	Under bulb warning
UnexpectedError	By the unexpected error, if it fails to execute the command.

#### 5.18. Mode

**Capability**      kNkMAIDCapability\_Mode  
Not supported

#### 5.19. Acquire

**Capability**      kNkMAIDCapability\_Acquire  
**Object types**    Image, Thumbnail  
**ulType**          kNkMAIDCapType\_Process  
**ulOperations**    kNkMAIDCapOperation\_Start

#### 5.20. Start

**Capability**      kNkMAIDCapability\_Start  
Not supported

#### 5.21. Length

**Capability**      kNkMAIDCapability\_Length  
Not supported

#### 5.22. SampleRate

**Capability**      kNkMAIDCapability\_SampleRate  
Not supported

#### 5.23. Stereo

**Capability**      kNkMAIDCapability\_Stereo  
Not supported

#### 5.24. **Samples**

**Capability**      kNkMAIDCapability\_Samples  
Not supported

#### 5.25. **Filter**

**Capability**      kNkMAIDCapability\_Filter  
Not supported

#### 5.26. **Prescan**

**Capability**      kNkMAIDCapability\_Prescan  
Not supported

#### 5.27. **AutoFocus**

**Capability**      kNkMAIDCapability\_AutoFocus  
Not supported

#### 5.28. **AutoFocusPt**

**Capability**      kNkMAIDCapability\_AutoFocusPt  
Not supported

#### 5.29. **Focus**

**Capability**      kNkMAIDCapability\_Focus  
Not supported

#### 5.30. **Coords**

**Capability**      kNkMAIDCapability\_Coords  
Not supported

#### 5.31. **Resolution**

**Capability**      kNkMAIDCapability\_Resolution  
Not supported

#### 5.32. **Preview**

**Capability**      kNkMAIDCapability\_Preview

Not supported

### 5.33. **Negative**

**Capability**      kNkMAIDCapability\_Negative

Not supported

### 5.34. **Bits**

**Capability**      kNkMAIDCapability\_Bits

Not supported

### 5.35. **Planar**

**Capability**      kNkMAIDCapability\_Planar

Not supported

### 5.36. Lut

**Capability**        kNkMAIDCapability\_Lut

Not supported

### 5.37. Transparency

**Capability**        kNkMAIDCapability\_Transparency

Not supported

### 5.38. Threshold

**Capability**        kNkMAIDCapability\_Threshold

Not supported

### 5.39. Pixels

**Capability**        kNkMAIDCapability\_Pixels

**Object types**     Image, Thumbnail

**ulType**            kNkMAIDCapType\_Size

**ulOperations**     kNkMAIDCapOperation\_Get

### 5.40. ForceScan

**Capability**        kNkMAIDCapability\_ForceScan

Not supported

### 5.41. ForcePrescan

**Capability**        kNkMAIDCapability\_ForcePrescan

Not supported

### 5.42. ForceAutoFocus

**Capability**        kNkMAIDCapability\_ForceAutoFocus

Not supported

### 5.43. NegativeDefault

**Capability**        kNkMAIDCapability\_NegativeDefault

Not supported

#### 5.44. **Firmware**

**Capability**          kNkMAIDCapability\_Firmware

Not supported

#### 5.45. **CommunicationLevel1**

**Capability**          kNkMAIDCapability\_CommunicationLevel1

Not supported

#### 5.46. **CommunicationLevel2**

**Capability**          kNkMAIDCapability\_CommunicationLevel2

Not supported

#### 5.47. **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.

#### **Result Codes**

NotSupported	If you run the Operation that it is not supported against Capability.
UnexpectedError	By the unexpected error, if it fails to execute the command.

#### 5.48. **FreeBytes**

Not supported

#### 5.49. **FreeItems**

Not supported

#### 5.50. **Remove**

Not supported

### 5.51. FlashMode

<b>Capability</b>	kNkMAIDCapability_FlashMode
<b>Object types</b>	Source
<b>ulType</b>	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
<b>ulOperations</b>	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set,
<b>Data</b>	one of eNkMAIDFlashMode, eNkMAIDFlashModeDX2 6: Fill flash 7: Rear-curtain sync 8: Slow sync 9: Red-eye reduction 10: Slow sync + red-eye reduction 262: Flash Off

Flash mode ExposureMode SceneMode	Fill flash	Slow sync	Rear-curtain sync()	Red-eye reduction	Slow sync + red-eye reduction	Flash Off
P/A	Fill flash	Slow sync	Rear-curtain sync	Red-eye reduction	Slow sync + red-eye reduction	Flash Off
S,M	Fill flash	—	Rear-curtain sync	Red-eye reduction	—	Flash Off
AUTO	Fill flash	—	—	Red-eye reduction	—	Flash Off
U1/U2/U3	Follow the shooting mode set for the user mode.					

()The display state of the camera differs depending on the value of Capability\_ExposureMode. It also differs depending on external flash light.

When Capability\_ExternalNewTypeFlashMode is 7 (“Repeating flash”) and Capability\_ExposureMode is P,S,A,M, “Rear-curtain sync” cannot be set and 0 “Fill flash” will be set.

In the following cases, the value of this Capability is fixed to "262: flash off" and other values are not included in enumerated values.

- When the value of Capability\_SpotWBMode is 1(ON).
- When the value of Capability\_HDRMode is except 0(OFF).
- When the value of Capability\_LiveViewPhotoShootingMode is 1(ON).
- When the value of Capability\_ShootingMode is 11”Continuous H(extended)”.
- During movie live view.
- During the warning of SB setting.()

## Result Codes

ValueOutOfBounds	If an out-of-range value has been set.
NotSupported	If you run the Operation that it is not supported against Capability.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

### 5.52. ModuleType

**Capability**      kNkMAIDCapability\_ModuleType

**Object types**      Module

**ulType**      kNkMAIDCapType\_Unsigned

**ulOperations**      kNkMAIDCapOperation\_Get

### 5.53. AcquireStreamStart

**Capability**      kNkMAIDCapability\_AcquireStreamStart

Not supported

### 5.54. AcquireStreamStop

**Capability**      kNkMAIDCapability\_AcquireStreamStop

Not supported

### 5.55. AcceptDiskAcquisition

**Capability**      kNkMAIDCapability\_AcceptDiskAcquisition

**Object types**      Source

**ulType**      kNkMAIDCapType\_Generic

**ulOperations**      kNkMAIDCapOperation\_Get, kNkMAIDCapOperation\_Set

### 5.56. Version

**Capability**      kNkMAIDCapability\_Version

**Object types**      Module

**ulType**      kNkMAIDCapType\_Unsigned

**ulOperations**      kNkMAIDCapOperation\_Get

### 5.57. FilmFormat

**Capability**      kNkMAIDCapability\_FilmFormat



Not supported

#### 5.58. **TotalBytes**

**Capability**      kNkMAIDCapability\_TotalBytes

Not supported

## 6. Event

The client can't receive the event as follows while opening item object.

### 6.1. 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.

### 6.2. 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

### 6.3. WarmingUp

**Event** kNkMAIDEvent\_WarmingUp

Not supported

### 6.4. WarmedUp

**Event** kNkMAIDEvent\_WarmedUp

Not supported

### 6.5. 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 information of structure "NkMAIDCapInfo" of capability was changed.
- When the enum configuration of Capability with type of kNkMAIDCapType\_Array has been changed

※When there is a change for Capability\_FmmManual, Capability\_F0Manual, Capability\_ManualSetLensNo, this event is not issued and Event\_ManualSettingLensDataChanged will be issue

#### 6.6. .OrphanedChildren

**Event** kNkMAIDEvent\_OrphanedChildren  
Not supported

#### 6.7. 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).

※When there is a change for Capability\_FmmManual, Capability\_F0Manual, Capability\_ManualSetLensNo, this event is not issued and Event\_ManualSettingLensDataChanged will be issued.

#### 6.8. 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** 0 : The all SDRAM images by Capture, AFCapture, CaptureAsync, AFCaptureAsync, CaptureDustImage are finished to read or deleted.  
1: The all images by Capture, AFCapture, CaptureAsync, AFCaptureAsync, 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.

This event will issue per issuing Capture, or AFCapture, CaptureDustImage, CaptureAsync, AFCaptureAsync.

#### 6.9. 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.

Depending on the format of the recording device to be saved, this event is issued multiple times by one movie recording. It is issued at least once every 4GB.

### 6.10. RecordingInterrupted

This event 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** pointer to NkMAIDEventParam

The contents of the NkMAIDEventParam structure are as follows.

NkMAIDEventParam.ulEvent = kNkMAIDEvent\_RecordingInterrupted;

NkMAIDEventParam.ulElements = 2;

NkMAIDEventParam.ulParam[0] : Error type

1: Some error.

0: Low access speed card error.

NkMAIDEventParam.ulParam[1] : Recording device

0: Recording to card

1: Recording to external device

2: Recording to both card and external device

When the movie recording is stopped by interruptions of camera factor, this event is issued after kNkMAIDEvent\_AddChildInCard event for all video files.

When movie files are divided by one movie recording, the end of the movie can be known at this event. It can be determined that all kNkMAIDEvent\_AddChildInCard events issued between the stop of recording movie and issue of this event are movie data generated for one movie recording.

### 6.11. 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.

### 6.12. SBAdded

It is used to inform the flash unit is newly attached to the camera.

**Event** kNkMAIDEvent\_SBAdded

**Object types**      Source

**dataparamater**    pointer to NkMAIDEventParam

The contents of NkMAIDEventParam structure, becomes as follows.

NkMAIDEventParam.ulEvent = kNkMAIDEvent\_SBAdded

NkMAIDEventParam.ulElements= 1

NkMAIDEventParam.ulParam[0] = SBHandle

### 6.13. SBRemoved

It is used to inform the flash unit is detached from the camera.

**Event**              kNkMAIDEvent\_SBRemoved

**Object types**      Source

**dataparamater**    pointer to NkMAIDEventParam

The contents of NkMAIDEventParam structure, becomes as follows.

NkMAIDEventParam.ulEvent = kNkMAIDEvent\_SBRemoved;

NkMAIDEventParam.ulElements= 1;

NkMAIDEventParam.ulParam[0] = SBHandle;

NkMAIDEventParam.ulParam[0] = SBHandle;

### 6.14. SBAttrChanged

It is used to inform the attributes of the flash unit have changed.

This event is not issued when the attributes of the flash have changed by receiving Capability\_SBAttrValue command from the host.

**Event**              kNkMAIDEvent\_SBAttrChanged

**Object types**      Source

**dataparamater**    pointer to NkMAIDEventParam

The contents of NkMAIDEventParam structure, becomes as follows.

NkMAIDEventParam.ulEvent = kNkMAIDEvent\_SBAttrChanged;

NkMAIDEventParam.ulElements= 2;

NkMAIDEventParam.ulParam[0] = SBHandle;

NkMAIDEventParam.ulParam[1] = SBAttrID;

### 6.15. SBGroupAttrChanged

It is used to inform the attribute descriptor for the flash group or the current value has changed.

This event is not issued when the attributes of the flash have changed by receiving Capability\_SBGroupAttrValue command from the host.

**Event**              kNkMAIDEvent\_SBGroupAttrChanged

**Object types**      Source

**dataparamater**    pointer to NkMAIDEventParam

The contents of NkMAIDEventParam structure, becomes as follows.

NkMAIDEventParam.ulEvent = kNkMAIDEvent\_SBGroupAttrChanged;

NkMAIDEventParam.ulElements= 2;

NkMAIDEventParam.ulParam[0] = SBGroupID;

NkMAIDEventParam.ulParam[1] = SBGroupAttrID;

If the Capability\_SBWirelessMode is set to other than “Single flash” and the Capability\_SBWirelessMultipleFlashMode is set to “Repeating”, SBGroupID of the master flash is used to inform the changes for the following flash group regardless of the value of Capability\_SBUisableGroup.

- kNkMAIDSBGroupAttribute\_FlashLevel
- kNkMAIDSBGroupAttribute\_RepeatCount
- kNkMAIDSBGroupAttribute\_RepeatInterval

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#### 6.16. MovieRecordComplete

This event will be issued the host that the movie recording is successfully completed.

**Event**                    kNkMAIDEvent\_MovieRecordComplete

**Object types**        Source

**dataparamater**    Recording device

0: Recording to card

1: Recording to external device

2: Recording to both card and external device

This event will be issued when recording movie is completed by Capability\_MovRecInCardStatus(OFF), or the maximum recording time reaching. This event is issued after kNkMAIDEvent\_AddChildInCard event for all video files.

When movie files are divided by one movie recording, the end of the movie can be known at this event. It can be determined that all kNkMAIDEvent\_AddChildInCard events issued between the stop of recording movie and issue of this event are movie data generated for one movie recording.

#### 6.17. PictureControlAdjustChanged

This event will be issued the host that the setting related to Picture Control has changed.

**Event**                    kNkMAIDEvent\_PictureControlAdjustChanged

**Object types**        Source

**data parameter**    pointer to NkMAIDEventParam

The contents of the NkMAIDEventParam structure are as follows.

NkMAIDEventParam.ulEvent = kNkMAIDEvent\_PictureControlAdjustChanged

NkMAIDEventParam.ulElements = 2

NkMAIDEventParam.ulParam[0] : PicCtrlItem

NkMAIDEventParam.ulParam[1] : ShootingMode

0: Photo Shooting Menu

1: Movie Shooting Menu

This event will be issued when the following operations are made.

- When changing the setting of each item of picture control.
- When each item of the custom picture control is edited, registered, renamed or deleted.

The picture control item specified for PicCtrlItem will be changed depending on the setting value of ShootingMode.

[In case of Photo Shooting Menu]

The range of values enumerated is Capability\_PictureControl

[In case of Movie Shooting Menu]

The range of values enumerated is Capability\_MoviePictureControl (excluding "100: same as photo setting ") .

#### 6.18. StartMovieRecord

This event will be issued the host that the camera has started movie recording.

**Event**                    kNkMAIDEvent\_StartMovieRecord

**Object types**           Source

**dataparameter.**       Recording device

0: Recording to card

1: Recording to external device

2: Recording to both card and external device

This event will be issued the host that the camera has started movie recording by pressing the recording button of the camera. Recording device is specified for parameter. This event is not issued in case the starting of movie recording by Capability\_MovRecInCardStatus.

#### 6.19. ManualSettingLensDataChanged

This event will be issued the host that "Non-CPU lens data" has changed.

**Event**                    kNkMAIDEvent\_ManualSettingLensDataChanged

**Object types**           Source

**data parameter**       LensNo. to be changed



0～19 : No1～No20

LensNo. is specified for parameter.

## 7. Vendor Unique Results

### 7.1. ApertureFEE

The aperture is not set maximum F number.

<b>Result</b>	kNkMAIDResult_ApertureFEE
<b>Command</b>	Start
<b>Capability</b>	Capture, AFCapture, PreCapture, CaptureDustImage, CaptureAsync, AFCaptureAsync
<b>Explanation</b>	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.
<b>Expected Action</b>	The client displays the message to set the aperture to maximum F number and is waiting for next command.

### 7.2. BufferNotReady

This is not used in the current module.

### 7.3. NormalTTL

The speedlight is set TTL mode.

<b>Result</b>	kNkMAIDResult_NormalTTL
<b>Command</b>	Start
<b>Capability</b>	Capture, CaptureAsync
<b>Explanation</b>	The camera cannot take a picture when an external speedlight is attached and it is set TTL(measuring through the lens) mode.
<b>Expected Action</b>	The client displays the message that the camera cannot take a picture and is waiting for next command.

### 7.4. 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.

<b>Result</b>	kNkMAIDResult_MediaFull
<b>Command</b>	Start
<b>Capability</b>	Capture, AFCapture, CaptureDustImage, CaptureAsync, AFCaptureAsync
<b>Explanation</b>	There is no free space at the specified media, so the client can not take a picture.
<b>Expected Action</b>	The client displays the message that the camera cannot take a picture and is waiting for next command.

### 7.5. InvalidMedia

It shows that the client can not take a picture because recording media is broken.

<b>Result</b>	kNkMAIDResult_InvalidMedia
<b>Command</b>	Start
<b>Capability</b>	Capture, AFCapture, CaptureDustImage, CaptureAsync, AFCaptureAsync
<b>Explanation</b>	When Capability_SaveMedia is "Card" or "Card + SDRAM" it shows the client can not take a picture because the card is broken.
<b>Expected Action</b>	The client displays the message that the camera cannot take a picture and is waiting for next command.

### 7.6. EraseFailure

This is not used in the current module.

### 7.7. CameraNotFound

The module did not find a camera on the bus.

<b>Result</b>	kNkMAIDResult_CameraNotFound
<b>Command</b>	The commands need access to the camera. (most of the commands for the Source, the Item or the Data object.)
<b>Explanation</b>	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.
<b>Expected Action</b>	The client displays the message that the camera was disconnected and is waiting for next command.

### 7.8. BatteryDontWork

The main battery in the camera is used up.

<b>Result</b>	kNkMAIDResult_BatteryDontWork
<b>Command</b>	Start
<b>Capability</b>	Capture, AFCapture, CaptureDustImage, PreCapture, CaptureAsync, AFCaptureAsync
<b>Explanation</b>	The camera cannot take a picture because of the battery.
<b>Expected Action</b>	The client displays the message that the camera cannot take a picture and suggests changing battery.

### 7.9. ShutterBulb

The exposure time is set to Bulb.

<b>Result</b>	kNkMAIDResult_ShutterBulb
<b>Command</b>	Start
<b>Capability</b>	Capture, AFCapture, CaptureDustImage, CaptureAsync, AFCaptureAsync
<b>Explanation</b>	The camera cannot execute capture command if the Capability_ShutterSpeed is set to bulb.
<b>Expected Action</b>	The client displays the message that the camera cannot take a picture and is waiting for next command.

### 7.10. OutOfFocus

Auto focus operation is failed.

<b>Result</b>	kNkMAIDResult_OutOfFocus
<b>Command</b>	Start
<b>Capability</b>	Capture, AFCapture, CaptureAsync, AFCaptureAsync
<b>Explanation</b>	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, Capability_AFCapture, Capability_CaptureAsync or Capability_AFCaptureAsync.
<b>Expected Action</b>	The client displays the message that the camera is out of focus and is waiting for next command.

### 7.11. Protected

This is not used in the current module.

### 7.12. FileExists

This is not used in the current module.

### 7.13. SharingViolation

This is not used in the current module.

#### 7.14. DataTransFailure

An error occurred while data transference.

<b>Result</b>	kNkMAIDResult_DataTransFailure
<b>Command</b>	Start, Async
<b>Capability</b>	Acquire
<b>Explanation</b>	If this error occurs while the client read an image from DRAM, it will lose the image.
<b>Expected Action</b>	The client aborts the data transference.

#### 7.15. SessionFailure

The module cannot open source object because the camera cannot open more session.

<b>Result</b>	kNkMAIDResult_SessionFailure
<b>Command</b>	Open
<b>Capability</b>	-
<b>Explanation</b>	The camera can open 1 session. If the client tries to open more source object, the module returns this error.
<b>Expected Action</b>	The client displays an error message and is waiting for next command.

#### 7.16. FileRemoved

This is not used in the current module.

#### 7.17. BusReset

This command was aborted because bus-reset occurred.

<b>Result</b>	kNkMAIDResult_BusReset
<b>Command</b>	any command
<b>Capability</b>	any capability
<b>Explanation</b>	If bus-reset occurred, the command, which the module is executing, is aborted. Then the module returns this result for the command.
<b>Expected Action</b>	The client sends the command again.

#### 7.18. NonCPULens

This is not used in the current module.

#### 7.19. ReleaseButtonPressed

This is not used in the current module.

### 7.20. BatteryExhausted

This is not used in the current module.

### 7.21. CaptureFailure

The camera failed in setting the value for white balance preset data.

<b>Result</b>	kNkMAIDResult_CaptureFailure
<b>Command</b>	Start
<b>Capability</b>	WBPresetData, MovieWBPresetData, PreCapture
<b>Explanation</b>	When it fails in white balance measurement(Capability_PreCapture), this error is returned. For Capability_WBPresetData, Capability_MovieWBPresetData, this error returned if the preset of the specified index is protected.
<b>Expected Action</b>	The client displays the message to confirm that the specified index of the preset is not protected and set again and is waiting for next command.

### 7.22. InvalidString

This is not used in the current module.

### 7.23. NotInitialized

This is not used in the current module.

### 7.24. CaptureDisable

This is not used in the current module.

### 7.25. DeviceBusy

A camera did not receive a command.

<b>Result</b>	kNkMAIDResult_DeviceBusy
<b>Command</b>	any command
<b>Capability</b>	any capability
<b>Explanation</b>	Since a camera is in the state where the command is not receivable, when it is not able to perform, this error returns.
<b>Expected Action</b>	This command is sent again or a display of a user interface is returned to the state before command execution.

#### 7.26. CaptureDustFailure

The camera failed in taking a dust off ref photo.

<b>Result</b>	kNkMAIDResult_CaptureDustFailure
<b>Command</b>	Start
<b>Capability</b>	CaptureDustImage
<b>Explanation</b>	When it fails in taking a dust off ref photo(Capability_CaptureDustImage), this error is returned.
<b>Expected Action</b>	Do nothing.

#### 7.27. ICADown

This is not used in the current module.

#### 7.28. NotLiveView

Live view was automatically stopped by the factor of the camera. (Included the case of that the live view time limit passed.)

<b>Result</b>	kNkMAIDResult_NotLiveView
<b>Command</b>	Start, Set
<b>Capability</b>	GetLiveViewImage
<b>Explanation</b>	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.
<b>Expected Action</b>	The client displays an error message and is waiting for next command.

#### 7.29. MFDriveEnd

The focus position reached the end of focus area in manual focus.

<b>Result</b>	kNkMAIDResult_MFDriveEnd
<b>Command</b>	Set
<b>Capability</b>	DeviceReady
<b>Explanation</b>	When the focus position reached the end of focus area by Capability_MFDrive, this error is returned.
<b>Expected Action</b>	After kNkMAIDCapability_MFDrive run, If the focus position reached the end of focus area, the module returns this error code about kNkMAIDCapability_DeviceReady .

#### 7.30. UnformattedMedia

It shows that the client can not take a picture because the card is unformatted.

<b>Result</b>	kNkMAIDResult_UnformattedMedia
<b>Command</b>	Start
<b>Capability</b>	Capture, AFCapture, CaptureDustImage, CaptureAsync, AFCaptureAsync
<b>Explanation</b>	When Capability_SaveMedia is "Card" or "Card + SDRAM" it shows the client can not take a picture because the card is unformatted.
<b>Expected Action</b>	The client displays the message that the camera cannot take a picture and is waiting for next command.

### 7.31. MediaReadOnly

It shows that the client can not take a picture because the card is protected.

<b>Result</b>	kNkMAIDResult_MediaReadOnly
<b>Command</b>	Start
<b>Capability</b>	Capture, AFCapture, CaptureDustImage, CaptureAsync, AFCaptureAsync
<b>Explanation</b>	When Capability_SaveMedia is "Card" or "Card + SDRAM" it shows the client can not take a picture because the card is protected.
<b>Expected Action</b>	The client displays the message that the camera cannot take a picture and is waiting for next command.

### 7.32. DuringUpdate

This is not used in the current module.

### 7.33. BulbReleaseBusy

It shows during bulb exposure shooting.

<b>Result</b>	kNkMAIDResult_BulbReleaseBusy
<b>Command</b>	Start, Set
<b>Capability</b>	Capture, CaptureAsync
<b>Explanation</b>	It shows during bulb exposure shooting
<b>Expected Action</b>	If bulb exposure shooting started by Capability_Capture, Capability_CaptureAsync, kNkMAIDResult_BulbReleaseBusy will be returned until bulb exposure shooting is terminated.

### 7.34. SilentReleaseBusy

It shows during silent shooting.

<b>Result</b>	kNkMAIDResult_SilentReleaseBusy
<b>Command</b>	Start
<b>Capability</b>	DeviceReady



<b>Explanation</b>	It shows during silent shooting.
<b>Expected Action</b>	This result will be returned when the following all conditions will be met. <ul style="list-style-type: none"> <li>• Capability_LiveViewPhotoShootingMode is "1: ON"</li> <li>• After performed Capability_AFCapture, Capability_AFCaptureAsync, Capability_Capture or Capability_CaptureAsync</li> <li>• Perform Capability_DeviceReady before the silent shooting is completed</li> </ul>

#### 7.35. **MovieFrameReleaseBusy**

This is not used in the current module.

#### 7.36. **InvalidSBAttributeValue**

It shows that it does not support the specified SB attribute value.

<b>Result</b>	kNkMAIDResult_InvalidSBAttributeValue
<b>Command</b>	Set
<b>Capability</b>	SBAAttrValue, SBGroupAttrValue
<b>Explanation</b>	It shows that it does not support the specified SB attribute value.
<b>Expected Action</b>	The client displays the error message and is waiting for next command.

#### 7.37. **Waiting\_2ndRelease**

This is not used in the current module.

#### 7.38. **MirrorUpCapture\_Already\_Start**

This is not used in the current module.

#### 7.39. **RecInCard**

It shows that the start of recording by card was successful.

<b>Result</b>	kNkMAIDResult_RecInCard
<b>Command</b>	Set
<b>Capability</b>	MovRecInCardStatus
<b>Explanation</b>	It shows that the start of recording by card was successful.
<b>Expected Action</b>	When Capability_MovRecInCardStatus is 1(ON) and the start of recording by card was successful. It is returned to tell whether it records into the card.

#### 7.40. **RecInExternalDevice**

It shows that the start of recording by external device was successful.

<b>Result</b>	kNkMAIDResult_RecInExternalDevice
---------------	-----------------------------------

<b>Command</b>	Set
<b>Capability</b>	MovRecInCardStatus
<b>Explanation</b>	It shows that the start of recording by external device was successful.
<b>Expected Action</b>	When Capability_MovRecInCardStatus is 1(ON) and the start of recording by external device was successful. It is returned to tell whether it records into the external device.

#### 7.41. RecInCardAndExternalDevice

It shows that the start of recording by both card and external device was successful.

<b>Result</b>	kNkMAIDResult_RecInCardAndExternalDevice
<b>Command</b>	Set
<b>Capability</b>	MovRecInCardStatus
<b>Explanation</b>	It shows that the start of recording by both card and external device was successful.
<b>Expected Action</b>	When Capability_MovRecInCardStatus is 1(ON) and the start of recording by both card and external device was successful. It is returned to tell whether it records into both card and external device.

## 8. 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.

## 9. ASCII code table

Capability of camera comments only the following ASCII code 90 characters can be input.

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						

For each Capability of UserComment, ArtistName, CopyrightInfo, you can also enter the following five characters.

¥	^	`		~
---	---	---	--	---

## 10. DataTypeCode

The basic data types used by the camera are as follows.

DataTypeCode	Type	Description
0x0001	INT8	Signed 8-bit integer
0x0002	UINT8	Unsigned 8-bit integer
0x0003	INT16	Signed 16-bit integer
0x0004	UINT16	Unsigned 16-bit integer
0x0005	INT32	Signed 32-bit integer
0x0006	UINT32	Unsigned 32-bit integer
0x0007	INT64	Signed 64-bit integer
0x0008	UINT64	Unsigned 64-bit integer
0x0009	INT128	Signed 128-bit integer
0x000A	UINT128	Unsigned 128-bit integer
0x4001	AIN8	Signed 8-bit integer array
0x4002	AUINT8	Unsigned 8-bit integer array
0x4003	AIN16	Signed 16-bit integer array
0x4004	AUINT16	Unsigned 16-bit integer array
0x4005	AIN32	Signed 32-bit integer array
0x4006	AUINT32	Unsigned 32-bit integer array
0x4007	AIN64	Signed 64-bit integer array
0x4008	AUINT64	Unsigned 64-bit integer array
0x4009	AIN128	Signed 128-bit integer array
0x400A	AUINT128	Unsigned 128-bit integer array
0xFFFF	STR	Variable length Unicode character string

## 11. Capability table that can be set during live view photography, movie live view, movie recording, SpotWB.

The following table shows the capabilities that can be set during live view.

Capability			Live view photograph	Movie live view	During movie file recording	SpotWB
3	1	<a href="#">ImageSize</a>	○	×	×	×
	2	<a href="#">RawImageSize</a>	○	×	×	×
	3	<a href="#">CompressionLevel</a>	○	×	×	×

Capability			Live view photograph	Movie live view	During movie file recording	SpotWB
3	4	<a href="#">WBMode</a>	○	○	○	×
	5	<a href="#">Sensitivity</a>	○	○	○	×
	6	<a href="#">ResetMenuBank</a>	○	○	×	×
	7	<a href="#">CompressRAWEx</a>	○	○	×	×
	8	<a href="#">WB TuneAuto</a>	○	○	○	×
	9	<a href="#">WBAutoType</a>	○	○	○	×
	10	<a href="#">WB TuneIncandescent</a>	○	○	○	×
	11	<a href="#">WB FluorescentType</a>	○	○	○	×
	12	<a href="#">WB TuneFluorescent</a>	○	○	○	×
	13	<a href="#">WB TuneSunny</a>	○	○	○	×
	14	<a href="#">WB TuneFlash</a>	○	○	○	×
	15	<a href="#">WB TuneShade</a>	○	○	○	×
	16	<a href="#">WB TuneCloudy</a>	○	○	○	×
	17	<a href="#">WB TuneColorTempEx</a>	○	○	○	×
	18	<a href="#">WB TuneColorAdjust</a>	○	○	○	×
	19	<a href="#">WB TuneNatural</a>	○	○	○	×
	20	<a href="#">WB TunePreset1</a>	○	○	○	×
	21	<a href="#">WB TunePreset2</a>	○	○	○	×
	22	<a href="#">WB TunePreset3</a>	○	○	○	×
	23	<a href="#">WB TunePreset4</a>	○	○	○	×
	24	<a href="#">WB TunePreset5</a>	○	○	○	×
	25	<a href="#">WB TunePreset6</a>	○	○	○	×
	26	<a href="#">WB PresetProtect1</a>	○	○	×	×
	27	<a href="#">WB PresetProtect2</a>	○	○	×	×
	28	<a href="#">WB PresetProtect3</a>	○	○	×	×
	29	<a href="#">WB PresetProtect4</a>	○	○	×	×
	30	<a href="#">WB PresetProtect5</a>	○	○	×	×
	31	<a href="#">WB PresetProtect6</a>	○	○	×	×
	32	<a href="#">WB PresetNumber</a>	○	○	○	×
	33	<a href="#">WB PresetName</a>	○	○	×	×
	34	<a href="#">WB PresetData</a>	○	○	×	×
	35	<a href="#">WB GainRed</a>	--	--	--	--
	36	<a href="#">WB GainBlue</a>	--	--	--	--

Capability			Live view photograph	Movie live view	During movie file recording	SpotWB
3	37	<a href="#">CCDDDataMode</a>	○	○	×	×
	38	<a href="#">ImageColorSpace</a>	○	○	×	×
	39	<a href="#">IsoControl</a>	○	○	×	×
	40	<a href="#">NoiseReduction</a>	○	○	×	×
	41	<a href="#">NoiseReductionHighISO</a>	○	○	×	×
	42	<a href="#">CompressRAWBitMode</a>	○	○	×	×
	43	<a href="#">PictureControl</a>	○	○	×	×
	44	<a href="#">PictureControlDataEx2</a>	○	○	×	×
	45	<a href="#">GetPicCtrlInfo</a>	--	--	--	--
	46	<a href="#">DeleteCustomPictureControl</a>	○	○	×	○
	47	<a href="#">Active_D_Lighting</a>	○	○	×	×
	48	<a href="#">ISOAutoShutterTime</a>	○	○	×	×
	49	<a href="#">ISOAutoShutterTimeAutoValue</a>	○	○	×	×
	50	<a href="#">ISOAutoHiLimit</a>	○	○	○	×
	51	<a href="#">VignetteControl</a>	○	○	×	×
	52	<a href="#">MovieScreenSize</a>	○	○	×	×
	53	<a href="#">MovieImageQuality</a>	○	○	×	×
	54	<a href="#">MovieRecMicrophone</a>	○	○	○	×
	55	<a href="#">MovieRecMicrophoneValue</a>	○	○	○	×
	56	<a href="#">AutoDistortion</a>	○	○	×	×
	57	<a href="#">UserMode1</a>	--	--	--	--
	58	<a href="#">UserMode2</a>	--	--	--	--
	59	<a href="#">UserMode3</a>	--	--	--	--
	60	<a href="#">HDRMode</a>	○	×	×	×
	61	<a href="#">HDRExposure</a>	○	×	×	×
	62	<a href="#">HDRSmoothing</a>	○	×	×	×
	63	<a href="#">HDRSaveIndividualImages</a>	○	×	×	×
	64	<a href="#">FlashISOAutoHighLimit</a>	○	○	×	×
	65	<a href="#">ResetCustomSetting</a>	○	○	×	×
	66	<a href="#">AFcPriority</a>	○	○	×	×
	67	<a href="#">AFsPriority</a>	○	○	×	×
	68	<a href="#">AFLockOnAcross</a>	○	○	×	×
	69	<a href="#">FaceDetection</a>	○	○	×	×

Capability			Live view photograph	Movie live view	During movie file recording	SpotWB
3	70	<a href="#">AFAreaSelector</a>	○	○	×	×
	71	<a href="#">AFAreaPoint</a>	○	○	×	×
	72	<a href="#">EVInterval</a>	○	○	×	×
	73	<a href="#">CWMeteringDiameter</a>	○	○	×	×
	74	<a href="#">ExpBaseMatrix</a>	○	○	×	×
	75	<a href="#">ExpBaseCenter</a>	○	○	×	×
	76	<a href="#">ExpBaseSpot</a>	○	○	×	×
	77	<a href="#">ExpBaseHighlight</a>	○	○	×	×
	78	<a href="#">ShootingSpeed</a>	○	○	×	×
	79	<a href="#">ShootingLimit</a>	○	○	×	×
	80	<a href="#">ExposureDelayEx</a>	○	○	×	×
	81	<a href="#">NumberingMode</a>	○	○	×	×
	82	<a href="#">ResetFileNumber</a>	○	○	×	×
	83	<a href="#">FlashSyncTime</a>	○	○	×	×
	84	<a href="#">FlashSlowLimit</a>	○	○	×	×
	85	<a href="#">ExposureCompFlashUsed</a>	○	○	×	×
	86	<a href="#">BracketingVary</a>	○	○	×	×
	87	<a href="#">BracketingFactor</a>	○	○	×	×
	88	<a href="#">BracketingOrder</a>	○	○	×	×
	89	<a href="#">ShutterSpeedLockSetting</a>	○	○	×	×
	90	<a href="#">ApertureLockSetting</a>	○	○	×	×
	91	<a href="#">MovieReleaseButton</a>	○	○	×	×
	92	<a href="#">SBWirelessMode</a>	○	×	×	×
	93	<a href="#">SBWirelessMultipleFlashMode</a>	○	×	×	×
	94	<a href="#">SBUsableGroup</a>	--	--	--	--
	95	<a href="#">WirelessCLSEntryMode</a>	○	○	×	×
	96	<a href="#">SBPINCode</a>	○	○	×	×
	97	<a href="#">RadioMultipleFlashChannel</a>	--	--	--	--
	98	<a href="#">OpticalMultipleFlashChannel</a>	○	×	×	×
	99	<a href="#">FlashRangeDisplay</a>	○	×	×	×
	100	<a href="#">AllTestFiringDisable</a>	--	--	--	--
	101	<a href="#">SBSettingMemberLock</a>	○	×	×	×
	102	<a href="#">ShootNoCard</a>	○	○	×	×

Capability			Live view photograph	Movie live view	During movie file recording	SpotWB
3	103	<a href="#">UserComment</a>	○	○	×	×
	104	<a href="#">EnableComment</a>	○	○	×	×
	105	<a href="#">ClockDateTime</a>	○	○	×	×
	106	<a href="#">ManualSetLensNo</a>	○	○	×	×
	107	<a href="#">FmmManual</a>	○	○	×	×
	108	<a href="#">F0Manual</a>	○	○	×	×
	109	<a href="#">EnableCopyright</a>	○	○	×	×
	110	<a href="#">ArtistName</a>	○	○	×	×
	111	<a href="#">CopyrightInfo</a>	○	○	×	×
	112	<a href="#">ShutterSpeed</a>	○	×	×	×
	113	<a href="#">FlexibleProgram</a>	○	○	×	×
	114	<a href="#">Aperture</a>	○	○	○	×
	115	<a href="#">MeteringMode</a>	○	○	×	×
	116	<a href="#">ExposureMode</a>	○	○	×	○
	117	<a href="#">ExposureComp</a>	○	○	○	×
	118	<a href="#">ShootingMode</a>	○	○	×	○
	119	<a href="#">ContinuousShootingNum</a>	○	○	○	×
	120	<a href="#">FocusAreaMode</a>	○	○	×	×
	121	<a href="#">EnableBracketing</a>	○	×	×	×
	122	<a href="#">AEBracketingStep</a>	○	○	×	×
	123	<a href="#">WBBracketingStep</a>	○	○	×	×
	124	<a href="#">BracketingType</a>	○	○	×	×
	125	<a href="#">ADLBracketingType</a>	○	○	×	×
	126	<a href="#">ADLBracketingStep</a>	○	○	×	×
	127	<a href="#">LiveViewStatus</a>	○	○	○	○
	128	<a href="#">LiveViewProhibit</a>	--	--	--	--
	129	<a href="#">CameraInclination</a>	--	--	--	--
	130	<a href="#">RemainContinuousShooting</a>	--	--	--	--
	131	<a href="#">RemainCountInMedia</a>	--	--	--	--
	132	<a href="#">LockExposure</a>	--	--	--	--
	133	<a href="#">LockFocus</a>	--	--	--	--
	134	<a href="#">LockFV</a>	--	--	--	--
	135	<a href="#">ExposureStatus</a>	--	--	--	--

Capability			Live view photograph	Movie live view	During movie file recording	SpotWB
3	136	<a href="#">InfoDisplayErrStatus</a>	--	--	--	--
	137	<a href="#">FocalLength</a>	--	--	--	--
	138	<a href="#">FocusMode</a>	--	--	--	--
	139	<a href="#">BracketingCount</a>	--	--	--	--
	140	<a href="#">ExternalFlashStatus</a>	--	--	--	--
	141	<a href="#">ExternalFlashComp</a>	--	--	--	--
	142	<a href="#">ExternalFlashSort</a>	--	--	--	--
	143	<a href="#">ExternalNewTypeFlashMode</a>	--	--	--	--
	144	<a href="#">LensInfo</a>	--	--	--	--
	145	<a href="#">AFCapture</a>	○	×	×	×
	146	<a href="#">ContrastAF</a>	○	○	○	○
	147	<a href="#">MFDriveStep</a>	○	○	○	○
	148	<a href="#">MFDrive</a>	○	○	○	○
	149	<a href="#">ContrastAFArea</a>	○	○	○	×
	150	<a href="#">CaptureDustImage</a>	○	○	×	×
	151	<a href="#">DeleteDramImage</a>	○	○	×	○
	152	<a href="#">RawJpegImageStatus</a>	--	--	--	--
	153	<a href="#">CurrentItemID</a>	○	○	○	○
	154	<a href="#">GetLiveViewImage</a>	○	○	○	○
	155	<a href="#">GetVideoImageEx</a>	○	○	×	○
	156	<a href="#">LockCamera</a>	○	○	×	×
	157	<a href="#">CameraType</a>	--	--	--	--
	158	<a href="#">LensType</a>	--	--	--	--
	159	<a href="#">MovRecInCardStatus</a>	×	○	○	×
	160	<a href="#">MovRecInCardProhibit</a>	--	--	--	--
	161	<a href="#">AngleLevel</a>	--	--	--	--
	162	<a href="#">AngleLevelPitch</a>	--	--	--	--
	163	<a href="#">AngleLevelYaw</a>	--	--	--	--
	164	<a href="#">SaveMedia</a>	○	○	×	×
	165	<a href="#">TerminateCapture</a>	○	○	×	○
	166	<a href="#">BlinkingStatus</a>	--	--	--	--
	167	<a href="#">LiveViewSelector</a>	○	○	×	×
	168	<a href="#">ResetWBMode</a>	○	○	×	×



Capability			Live view photograph	Movie live view	During movie file recording	SpotWB
3	169	<a href="#">MovieShutterSpeed</a>	×	○	○	×
	170	<a href="#">MovieAperture</a>	×	○	○	×
	171	<a href="#">MovieSensitivity</a>	○	○	○	×
	172	<a href="#">MovieExposureComp</a>	×	○	○	×
	173	<a href="#">MovieRecFrameCount</a>	--	--	--	--
	174	<a href="#">RetractableLensWarningStatus</a>	--	--	--	--
	175	<a href="#">MovieWindNoiseReduction</a>	○	○	○	×
	176	<a href="#">MovieRecordingZone</a>	○	○	○	×
	177	<a href="#">MovieISOControl</a>	○	○	○	×
	178	<a href="#">MovieISOAutoHiLimit</a>	○	○	○	×
	179	<a href="#">MoviePictureControlDataEx2</a>	○	○	×	×
	180	<a href="#">GetMoviePicCtrlInfo</a>	--	--	--	--
	181	<a href="#">DeleteMovieCustomPictureControl</a>	○	○	×	○
	182	<a href="#">MovieResetMenuBank</a>	○	○	×	×
	183	<a href="#">MovieCCDDataMode</a>	○	○	×	×
	184	<a href="#">MovieWBPresetsData</a>	○	○	×	×
	185	<a href="#">MovieWBMode</a>	○	○	○	×
	186	<a href="#">MovieWBTuneAuto</a>	○	○	○	×
	187	<a href="#">MovieWBAutoType</a>	○	○	○	×
	188	<a href="#">MovieWBTuneIncandescent</a>	○	○	○	×
	189	<a href="#">MovieWBFluorescentType</a>	○	○	○	×
	190	<a href="#">MovieWBTuneFluorescent</a>	○	○	○	×
	191	<a href="#">MovieWBTuneSunny</a>	○	○	○	×
	192	<a href="#">MovieWBTuneShade</a>	○	○	○	×
	193	<a href="#">MovieWBTuneCloudy</a>	○	○	○	×
	194	<a href="#">MovieWBTuneColorTempEx</a>	○	○	○	×
	195	<a href="#">MovieWBTuneColorAdjust</a>	○	○	○	×
	196	<a href="#">MovieWBTuneNatural</a>	○	○	○	×
	197	<a href="#">MovieWBTunePreset1</a>	○	○	○	×
	198	<a href="#">MovieWBTunePreset2</a>	○	○	○	×
	199	<a href="#">MovieWBTunePreset3</a>	○	○	○	×
	200	<a href="#">MovieWBTunePreset4</a>	○	○	○	×
	201	<a href="#">MovieWBTunePreset5</a>	○	○	○	×

Capability			Live view photograph	Movie live view	During movie file recording	SpotWB
3	202	<a href="#">MovieWBTunePreset6</a>	○	○	○	×
	203	<a href="#">MovieWBPresetsProtect1</a>	○	○	×	×
	204	<a href="#">MovieWBPresetsProtect2</a>	○	○	×	×
	205	<a href="#">MovieWBPresetsProtect3</a>	○	○	×	×
	206	<a href="#">MovieWBPresetsProtect4</a>	○	○	×	×
	207	<a href="#">MovieWBPresetsProtect5</a>	○	○	×	×
	208	<a href="#">MovieWBPresetsProtect6</a>	○	○	×	×
	209	<a href="#">MovieWBPresetsNumber</a>	○	○	×	×
	210	<a href="#">MovieWBPresetsName</a>	○	○	×	×
	211	<a href="#">MovieWBGainRed</a>	--	--	--	--
	212	<a href="#">MovieWBGainBlue</a>	--	--	--	--
	213	<a href="#">MovieResetWBMode</a>	○	○	×	×
	214	<a href="#">MovieNoiseReductionHighISO</a>	○	○	×	×
	215	<a href="#">MoviePictureControl</a>	○	○	×	×
	216	<a href="#">ISOControlSensitivity</a>	--	--	--	--
	217	<a href="#">MovieMeteringMode</a>	○	○	×	×
	218	<a href="#">LiveViewImageSize</a>	○	○	×	×
	219	<a href="#">SpotWBMode</a>	×	○	×	○
	220	<a href="#">SpotWBMeasure</a>	○	○	×	○
	221	<a href="#">SpotWBChangeArea</a>	○	○	×	○
	222	<a href="#">SpotWBResultDispEnd</a>	○	○	×	○
	223	<a href="#">RawJpegTransferStatus</a>	○	○	○	○
	224	<a href="#">GetSBHandles</a>	--	--	--	--
	225	<a href="#">GetSBAttrDesc</a>	--	--	--	--
	226	<a href="#">SBAttrValue</a>	○	○	×	×
	227	<a href="#">GetSBGroupAttrDesc</a>	--	--	--	--
	228	<a href="#">SBGroupAttrValue</a>	○	○	×	×
	229	<a href="#">TestFlash</a>	○	○	○	×
	230	<a href="#">ElectronicFrontCurtainShutter</a>	○	○	×	×
	231	<a href="#">CaptureAsync</a>	○	○	○	×
	232	<a href="#">AFCaptureAsync</a>	○	○	○	×
	233	<a href="#">DeviceReady</a>	○	○	○	○
	234	<a href="#">ElectronicVR</a>	○	○	×	×

Capability			Live view photograph	Movie live view	During movie file recording	SpotWB
3	235	<a href="#">MovieActive D Lighting</a>	○	○	×	×
	236	<a href="#">FlickerReductionSetting</a>	○	○	×	×
	237	<a href="#">SBIntegrationFlashReady</a>	--	--	--	--
	238	<a href="#">ExternalRecordingControl</a>	○	○	×	×
	239	<a href="#">LiveViewPhotoShootingMode</a>	○	○	×	×
	240	<a href="#">DetectionPeaking</a>	○	○	○	×
	241	<a href="#">HighlightBrightness</a>	○	○	○	×
	242	<a href="#">MovieAttenuator</a>	○	○	○	×
	243	<a href="#">SaveCameraSetting</a>	○	○	×	○
	244	<a href="#">MovieFileType</a>	○	○	×	×
	245	<a href="#">InternalFlashComp</a>	○	×	×	×
	246	<a href="#">GetRecordingInfo</a>	--	--	--	--
	247	<a href="#">DiffractionCompensation</a>	○	○	×	×
	248	<a href="#">VibrationReduction</a>	○	○	×	×
	249	<a href="#">MovieAutoDistortion</a>	○	○	×	×
	250	<a href="#">MovieAfAreaMode</a>	○	○	○	×
	251	<a href="#">MovieVibrationReduction</a>	○	○	×	×
	252	<a href="#">MovieFocusMode</a>	○	○	○	×
	253	<a href="#">MovieVignetteControl</a>	○	○	×	×
	254	<a href="#">MovieDiffractionCompensation</a>	○	○	×	×
	255	<a href="#">RecordTimeCodes</a>	○	○	×	×
	256	<a href="#">CountUpMethod</a>	○	○	×	×
	257	<a href="#">TimeCodeOrigin</a>	○	○	×	×
	258	<a href="#">DropFrame</a>	○	○	×	×
	259	<a href="#">MovieLogOutput</a>	--	--	--	--
	260	<a href="#">MovieLogSetting</a>	○	○	×	×
	261	<a href="#">HDMIOutputDataDepth</a>	○	○	×	×
	262	<a href="#">LowLightAF</a>	○	○	×	×
	263	<a href="#">ApplyLiveViewSetting</a>	○	○	×	×
	264	<a href="#">LiveViewImageStatus</a>	--	--	--	--
	265	<a href="#">LiveViewZoomArea</a>	○	○	×	○
	266	<a href="#">TrackingAFArea</a>	○	○	○	×
	267	<a href="#">MovieAfSpeed</a>	○	○	×	×

Capability			Live view photograph	Movie live view	During movie file recording	SpotWB
3	268	<a href="#">MovieAfSpeedWhenToApply</a>	○	○	×	×
	269	<a href="#">MovieAfTrackingSensitivity</a>	○	○	×	×
	270	<a href="#">PreCapture</a>	○	○	×	×
	271	<a href="#">GetManualSettingLensData</a>	○	○	○	○
	272	<a href="#">AFModeAtLiveView</a>	○	○	×	×
	273	<a href="#">ElectronicFrontCurtainShutterEx</a>	○	○	×	×
	274	<a href="#">LiveViewImageCompression</a>	○	○	×	×
5	1	<a href="#">AsyncRate</a>	--	--	--	--
	2	<a href="#">ProgressProc</a>	○	○	○	○
	3	<a href="#">EventProc</a>	○	○	○	○
	4	<a href="#">DataProc</a>	○	○	○	○
	5	<a href="#">UIRequestProc</a>	○	○	○	○
	6	<a href="#">IsAlive</a>	--	--	--	--
	7	<a href="#">Children</a>	○	○	○	○
	8	<a href="#">State</a>	--	--	--	--
	9	<a href="#">Name</a>	--	--	--	--
	10	<a href="#">Description</a>	--	--	--	--
	11	Interface	--	--	--	--
	12	DataTypes	--	--	--	--
	13	DateTime	--	--	--	--
	14	StoredBytes	--	--	--	--
	15	Eject	--	--	--	--
	16	Feed	--	--	--	--
	17	<a href="#">Capture</a>	○	○	○	×
	18	Mode	--	--	--	--
	19	<a href="#">Acquire</a>	○	○	○	○
	20	Start	--	--	--	--
	21	Length	--	--	--	--
	22	SampleRate	--	--	--	--
	23	Stereo	--	--	--	--
	24	Samples	--	--	--	--
	25	Filter	--	--	--	--
	26	Prescan	--	--	--	--

Capability			Live view photograph	Movie live view	During movie file recording	SpotWB
	27	AutoFocus	--	--	--	--
5	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	<a href="#">FlashMode</a>	○	×	×	×
	52	ModuleType	--	--	--	--
	53	AcquireStreamStart	--	--	--	--
	54	AcquireStreamStop	--	--	--	--
	55	AcceptDiskAcquisition	--	--	--	--
	56	Version	--	--	--	--
	57	FilmFormat	--	--	--	--
	58	TotalBytes	--	--	--	--

## 12. History

### 12.1. Ver.1.3 Rev.1.1      October 29, 2021

- Added of the following capabilities.
  - 3.274.    LiveViewImageCompression
  - 11.        Capability table that can be set during live view photography, movie live view, movie recording, SpotWB
- Changed Description in the following.
  - 3.154    GetLiveViewImage
  - 3.154.1   LiveView data format
  - 3.175    MovieWindNoiseReduction
  - 5.17     Capture
  - 9.ASCII code table
  - 11.        Capability table that can be set during live view photography, movie live view, movie recording, SpotWB

### 12.2. Ver.1.3 Rev.1.0      February 26, 2020

- Added informations about Z 7\_FU3(Z 7 firmup3).
  - 2.        Supported camera
  - 3.69.    FaceDetection
  - 3.112.   ShutterSpeed
  - 3.154.1. LiveView data format
  - 3.157.   CameraType
  - 3.230.   ElectronicFrontCurtainShutter
- Changed Description in the following.
  - 3.105.   ClockDateTime            ...Added setting prohibition error.
  - 3.116.   ExposureMode            ...Correction of setting prohibition error.
  - 3.147.   MFDriveStep            ...Changed description.
  - 3.148.   MFDrive                ...Changed description.
  - 3.149.   ContrastAFArea        ...Changed description.
  - 3.159.   MovRecInCardStatus    ...Changed description.
  - 3.216.   ISOControlSensitivity   ...Clarified default value..

### 12.3. Ver.1.2 Rev.1.0      November 1, 2019

- Added informations about Z 7\_FU2(Z 7 firmup2).
  - 2.        Supported camera

- 3.69. FaceDetection
- 3.112. ShutterSpeed
- 3.154.1. LiveView data format
- 3.157. CameraType
- 3.230. ElectronicFrontCurtainShutter
- 3.273. ElectronicFrontCurtainShutterEx ...Add new.
- 11. Capability table that can be set during live view photography, movie live view, movie recording, SpotWB
- Corrected Description in the following.
  - 3.39. IsoControl ...Correction of default value.
  - 3.52. MovieScreenSize ...Correction of default value.
  - 3.56. AutoDistortion ...Correction of default value.
  - 3.120. FocusAreaMode ... Correction of setting prohibition error.
  - 3.121. EnableBracketing ...Correction of setting prohibition error.
  - 3.122. AEBracketingStep ...Correction of default value.
  - 3.132. LockExposure ...Correction of default value.
  - 3.165. TerminateCapture ...Correction of setting prohibition error.
  - 3.230. ElectronicFrontCurtainShutter ...Added result codes.
  - 3.265. LiveViewZoomArea ...Corrected the screen size of descriptions not listed.
  - 6.8. CaptureComplete ...Corrected data parameter value error.

#### 12.4. Ver.1.1 Rev.1.0 April 25, 2019

- Added informations about Z 7\_FU1(Z 7 firmup1).
  - 2. Supported camera
  - 3.5. Sensitivity
  - 3.69. FaceDetection
  - 3.112. ShutterSpeed
  - 3.154.1. LiveView data format
  - 3.157. CameraType
  - 3.230. ElectronicFrontCurtainShutter
- Changed description of the following capabilities.
  - 3.56. AutoDistortion ...Changed the execution condition.
  - 3.69. FaceDetection ...Corrected the description of default value of Z 7.
  - 3.219. SpotWBMode ...Changed the execution condition.
  - 3.132. LockExposure ...Chanaged description and Result Codes.
  - 3.155. GetVideoImageEx ...Added description about video transfer reset.  
 Changed to use parameter ulloffset.  
 Corrected the description of NkMAIDGetVideoImageEx.

- 3.265. LiveViewZoomArea ...Changed the description of the range of possible values.

12.5. Rev.1.1 November 16, 2018

- 3.5. Sensitivity ...Added the description of the condition of limiting the upper value.
- 3.106. ManualSetLensNo ...Fixed the description of event notification.
- 5.27. AutoFocus ...Added a definition of this Capability.

12.6. Rev.1.0 September 28, 2018 First version