Nikon Corporation Type0025 vendor unique capabilities

1.　Introduction

This document explains the vendor unique capabilities, which are used by Type0025 module
(Type0025.md3, Type0025 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

Type0025 module can control Z 50 camera.

3.Vendor Unique Capabilities

The vendor unique capabilities that are used by Type0025 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)" or "16: U 2 (User
  Mode 2)", the exposure mode set in kNkMAIDCapability_ UserMode1or2 .

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 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)】

Capability_CCDDataMode	DX	1:1	16:9
L	L(5568*3712)	L(3712*3712)	L(5568*3128)
M	M(4176*2784)	M(2784*2784)	M(4176*2344)
S	S(2784*1856)	S(1856*1856)	S(2784*1560)

【During movie live view (JPEG)】

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).
- ・ When the value of Capability_CompressionLevel is RAW.
- ・ 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. CompressionLevel

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

Capability kNkMAIDCapability_CompressionLevel

Object types Source

ulType   kNkMAIDCapType_Enum

      kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

      kNkMAIDCapOperation_Set

Data   JPEG Basic,

      JPEG Normal,

      JPEG Fine,

      RAW,

      RAW + JPEG Basic,

      RAW + JPEG Normal,

      RAW + JPEG Fine

This Capability does not represent the current setting value, but the camera control value. If [+ NEF (RAW)] function is applied, this capability will return [RAW+XXX].

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

- When the value of Capability_HDRMode is 1 (ON).
- When the exposure mode is EFFECTS (Miniature effect, Selective color, Night vision, Toy camera effect, Super vivid, Pop, Photo illustration).

During movie live view, the value of this Capability is "JPEG Fine"

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.

3.3. WBMode

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

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

3.4. 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, <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, 32000, 40000, 51200, Hi-1.0, Hi-2.0	Auto, <u>100,</u> 140, 200, 280, 400, 560, 800, 1100, 1600, 2200, 3200, 4500, 6400, 9000, 12800, 18000, 25600, 36000, 51200, 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 cases, 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 Capability_LiveViewPhotoShootingMode is 1 (ON).

The following case, this Capability is read only.
- The value of Capability_SpotWBMode is 1 (ON).
- When the exposure mode is Auto or EFFECTS(Night vision).

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. 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.

3.6. WBTuneAuto

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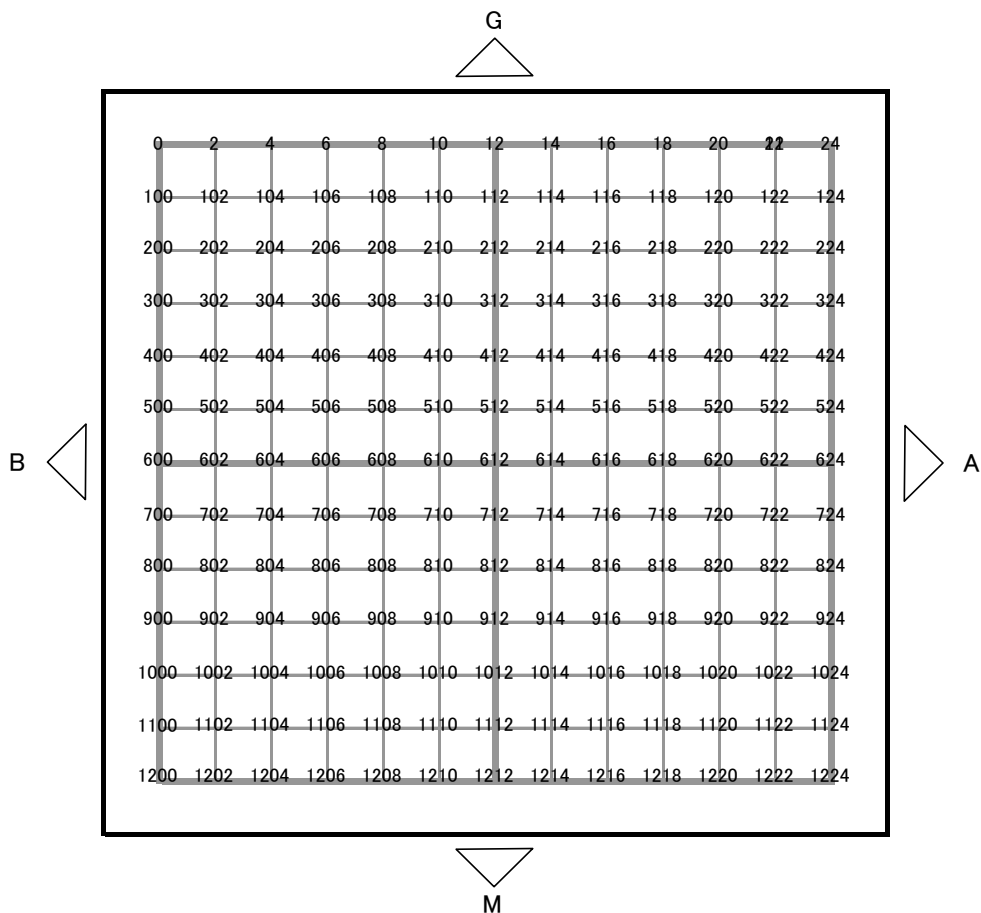
Data   0 to 1224step=1 (Default: 612)

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 infollowing 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.

3.7. WBAutoType

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

Capability   kNkMAIDCapability_WBAutoType

Object types   Source

ulType   kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,

                   kNkMAIDCapOperation_GetDefault

Data   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.

3.8. WBTuneIncandescent

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

Capability   kNkMAIDCapability_WBTuneIncandescent

Object types   Source

ulType   kNkMAIDCapType_Range

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

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

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

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1 (ON).
- During movie file recording, 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.

3.9. WBFluorescentType

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

Capability   kNkMAIDCapability_WBFluorescentType

Object types Source

ulType   kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,

                  kNkMAIDCapOperation_GetDefault

Data   one of eNkWBFluorescentType

                  0: Sodium-vapor lamps

                  1: Warm-white fluorescent

                  2: White fluorescent

                  3: Cool-white fluorescent

                  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.

3.10. WBTuneFluorescent

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

Capability   kNkMAIDCapability_WBTuneFluorescent

Object types Source

ulType   kNkMAIDCapType_Range

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

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

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

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1 (ON).
- During movie file recording, 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. 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.

3.12. 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.

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. 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.

3.14. WBTuneCloudy

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.

3.15. WBTuneColorTempEx

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.

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. WBTuneColorAdjust

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.

3.17. WBTuneNatural

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

Capability   kNkMAIDCapability_MovieWBTuneNatural

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 WBTuneAuto.

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.

3.18. 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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3.19. WBTunePreset2

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.

3.20. 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.

3.21. WBTunePreset4

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.

3.22. 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.

3.23. WBTunePreset6

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.

3.24. WBPresetProtect1

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

Capability   kNkMAIDCapability_WBPresetProtect1

Object types   Source

ulType   kNkMAIDCapType_Unsigned

ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault,

                    kNkMAIDCapOperation_Set

Data   one of eNkMAIDWBPresetProtect1

                    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.

3.25. WBPresetProtect2

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

Capability   kNkMAIDCapability_WBPresetProtect2

Object types   Source

ulType   kNkMAIDCapType_Unsigned

ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault,

                  kNkMAIDCapOperation_Set

Data   one of eNkMAIDWBPresetProtect2

                  <u>0: Off</u>

                  1: On

The following cases, this Capability is read only.

     ·   During movie file recording.

     ·   The value of Capability_SpotWBMode is 1(ON).

     ·   When the 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.

3.26. WBPresetProtect3

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

Capability   kNkMAIDCapability_WBPresetProtect3

Object types   Source

ulType   kNkMAIDCapType_Unsigned

ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault,

kNkMAIDCapOperation_Set

Data   one of eNkMAIDWBPresetProtect3

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. WBPresetProtect4

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

Capability　　kNkMAIDCapability_WBPresetProtect4

Object types　Source

ulType　　　　kNkMAIDCapType_Unsigned

ulOperations　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault,
　　　　　　　　kNkMAIDCapOperation_Set

Data　　　　　one of eNkMAIDWBPresetProtect4
　　　　　　　　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. 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.

3.29. WBPresetProtect6

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

Capability   kNkMAIDCapability_WBPresetProtect6

Object types   Source

ulType   kNkMAIDCapType_Unsigned

ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault,
                   kNkMAIDCapOperation_Set

Data   one of eNkMAIDWBPresetProtect6
                    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. WBPresetNumber

This will set the photo shooting Preset manual number.

Capability   kNkMAIDCapability_WBPresetNumber

Object types   Source

ulType   kNkMAIDCapType_Enum

                kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

                kNkMAIDCapOperation_Set

Data   <u>Preset 1</u>, Preset 2, Preset 3, Preset 4, Preset5, Preset6

This Capability's value is used by Capability_PreCapture to determine where to save the white balance data.

This Capability only stores the preset number inside the module and does not send any command to the camera.

To set the value of Photo shooting menu [White balance] – [Preset manual], use Capability_WBMode.

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.

3.31. WBPresetName

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

Capability   kNkMAIDCapability_WBPresetName

Object types   Source

ulType   kNkMAIDCapType_String

                 kNkMAIDCapType_Array

ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,

                 kNkMAIDCapOperation_GetArray

Data   NkMAIDArray

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

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_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.

3.32. CCDDataMode

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

Capability   kNkMAIDCapability_CCDDataMode

Object types   Source

ulType   kNkMAIDCapType_Unsigned

ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,

kNkMAIDCapOperation_GetDefault

Data   one of eNkMAIDCCDDataMode

4: DXformat

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).

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. 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.

3.34. 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   <u>True: used</u>   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.

3.35. 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   <u>False: not used</u>

The following cases, this Capability is read only.

・ The value of Capability_SpotWBMode is 1 (ON).

・ During movie file recording

・ The value of Capability_LiveViewPhotoShootingMode is 1(ON).

・ When the exposure mode is EFFECTS(Night vision).

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.

3.36. NoiseReductionHighISO

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

(Photo shooting menu)

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

The following cases, this Capability is read only.

- The value of Capability_SpotWBMode is 1 (ON).
- During movie file recording
  When the exposure mode is EFFECTS(Night vision).

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.

3.37. CompressRAWBitMode

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

Capability   kNkMAIDCapability_CompressRAWBitMode

Object types   Source

ulType   kNkMAIDCapType_Unsigned

ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault,

                   kNkMAIDCapOperation_Set

Data   one of eNkMAIDCompressRAWBitMode

                   0: 12-bit

                   1: 14-bit

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.

3.38. PictureControl

This will set Picture Control. (Photo shooting menu)

Capability   kNkMAIDCapability_PictureControl

ulType   kNkMAIDCapType_Enum

          kNkMAIDArrayType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

          kNkMAIDCapOperation_Set

Data   one of eNkMAIDPictureControl

    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

    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 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.

3.39. 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

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 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	· If you run the Operation that it is not supported against Capability. · When the following all conditions will be met. 　- The ulPicCtrlItem is the CustomPictureControl 　- The bModifiedFlag is true. 　- There is the defferece ulPicCtrlItem and BasePictureControl of PictureControlData 　- When unusable value is set for the PictureControlData. 　- The invalid PictureControlData is specified.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.39.1. 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

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

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

3.40. 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.

3.41. 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

          3: Off

          5: Extra high 1

          <u>6: Auto</u>

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.

3.42. 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.

3.43. ISOAutoShutterTimeAutoValue

This will set compensation value when the value of kNkMAIDCapability_ISOAutoShutterTimeis 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.

3.44. 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 eNkMAIDISOAutoHiLimit3

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

eNkMAIDISOAutoHiLimit3	ISO	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	○	○
26	8000	○	×
27	9000	×	○
28	10000	○	×
29	12800	○	○
32	16000	○	×
33	18000	×	○
34	20000	○	×
35	25600	○	○
36	32000	○	×
37	36000	×	○
38	40000	○	×
<u>39</u>	<u>51200</u>	○	○
24	Hi-1.0	○	○
25	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.

3.45. VignetteControl

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

Capability	kNkMAIDCapability_VignetteControl
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set
Data	one of eNkMAIDVignetteControl
	0: High
	1: Normal
	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.

3.46. 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
3	1920×1080 60p
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)

When this Capability is read only, it does not represent the current setting value, but the camera control value.

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. •If the exposure mode is EFFECTS and you try to set one of the following values: 15: 1920×1080 30p x4(slow-mo), 16: 1920×1080 25p x4(slow-mo), 17: 1920×1080 24p x5(slow-mo), 18: 1920×1080 120p, 19: 1920×1080 100p. •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.

3.47. 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.

3.48.　　　MovieRecMicrophone

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

Capability　　　　kNkMAIDCapability_MovieRecMicrophone

Object types　　Source

ulType　　　　　kNkMAIDCapType_Unsigned

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault,

　　　　　　　　　kNkMAIDCapOperation_Set

Data　　　　　　one of eNkMAIDMovRecMicrophone

　　　　　　　0: Auto sensitivity (A)

　　　　　　　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)".
- ・　　When the exposure mode is EFFECTS(Miniature effect).

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.

3.49. 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)".
- ・ When the exposure mode is EFFECTS(Miniature effect).

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. 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.

3.51. 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

0: Night landscape

1: Party/indoor

2: Beach/snow

3: Sunset

4: Dusk/dawn

5: Pet portrait

6: Candlelight

7: Blossom

8: Autums colors

9: Food

10: Silhouette

11: High key

12: Low key

13: Portrait

14: Landscape

15: Child

16: Sports

17: Close up

18: Night portrait

19: P （Program mode）

20: S （Speed priority）

21: A （Aperture priority）

22: M （Manual）

23: Auto

25: Night vision

27: Miniature effect

28: Selective color

29: Toy camera effect

30: Super vivid

31: Pop

32: Photo illustration

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

3.52. 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
	Same as UserMode1

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

3.53.　　　HDRMode

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

Capability　　　kNkMAIDCapability_HDRMode

Object types　　Source

ulType　　　　kNkMAIDCapType_Unsigned

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault,

　　　　　　　　kNkMAIDCapOperation_Set

Data　　　　　one of eNkMAIDHDRMode

　　　　　0: Off

　　　　　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.

When the value of Capability_LiveViewSelector is "1: Movie live view", in some cases this capability can become read only even if Capability_EnableBracketing is OFF. (For details, see EnableBracketing).

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.　　HDRExposure

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

Capability　　　kNkMAIDCapability_HDRExposure

Object types　　Source

ulType　　　　　kNkMAIDCapType_Unsigned

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault,
　　　　　　　　　　kNkMAIDCapOperation_Set

Data　　　　　　one of eNkMAIDHDRExposure

　　　　　　　　　0: Auto

　　　　　　　　　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.

When the value of Capability_LiveViewSelector is "1: Movie live view", in some cases this capability can become read only even if Capability_EnableBracketing is OFF. (For details, see EnableBracketing).

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.

3.55.　HDRSmoothing

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

Capability	kNkMAIDCapability_HDRSmoothing
Object types	Source
	ulType kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault,
	kNkMAIDCapOperation_Set
Data	one of eNkMAIDHDRSmoothing

　　　　　0: High

　　　　　1: Normal

　　　　　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.

When the value of Capability_LiveViewSelector is "1: Movie live view", in some cases this capability can become read only even if Capability_EnableBracketing is OFF. (For details, see EnableBracketing).

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.　HDRSaveIndividualImages

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

Capability	kNkMAIDCapability_HDRSaveIndividualImages
Object types	Source
ulType	kNkMAIDCapType_Enum
	kNkMAIDArrayType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
	kNkMAIDCapOperation_Set

Data   one of eNkMAIDHDRSaveIndividualImages
                0: OFF
                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.

When the value of Capability_LiveViewSelector is "1: Movie live view", in some cases this capability can become read only even if Capability_EnableBracketing is OFF. (For details, see EnableBracketing).

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.   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
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	○	○
29	32000	○	×
30	36000	×	○
31	40000	○	×
32	51200	○	○
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.

3.58.　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	"Normal"
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.

3.59.   EVInterval

This will set the EV interval of the Capability_ShutterSpeed, Capability_Aperture, Capability_FlexibleProgram, and Capability_AEBracketingStep. (Custom setting menu b1)

Capability   kNkMAIDCapability_EVInterval

Object types   Source

ulType   kNkMAIDCapType_Enum

                 kNkMAIDArrayType_PackedString

ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

                 kNkMAIDCapOperation_Set

Data

1/3step	"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.

3.60.　　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 - 100 (Default:100)

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.

3.61.   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"
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.

3.62.　　　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.

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

3.63.　　　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.

3.64. 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.

3.65. 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.

3.66.　　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.

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.　　EnableCopyright

This will set whether attach copyright information. (SETUP)

Capability　　　　kNkMAIDCapability_EnableCopyright

Object types　　　Source

ulType　　　　　　kNkMAIDCapType_Boolean

ulOperations　　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,

　　　　　　　　　　kNkMAIDCapOperation_GetDefault

Data　　　　　　　True: attach　　　<u>False: none</u>

The following cases, this Capability is read only.

　　　　　・　The value of Capability_SpotWBMode is 1(ON).

　　　　　・　During movie file recording.

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. 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.

3.69.　　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.

3.70. ShutterSpeed

This will set the shutter speed.

Capability   kNkMAIDCapability_ShutterSpeed

Object types   Source

ulType   kNkMAIDCapType_Enum

                 kNkMAIDArrayType_PackedString

ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

                 kNkMAIDCapOperation_Set

Data   Strings of shutter time in second. (e.g.)

                "30", …"1", "1/1.3", "1/1.6", …"1/4000"

                (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 value of Capability_ExternalFlashStatus is not "Not Exist", the maximum shutter speed value is limited by the value set in the Custom setting menu [e. Bracketing/flash] – [e1. Flash sync speed] 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 by the value set in the Custom setting menu [e. Bracketing/flash] – [e2. Flash shutter speed].

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 other than "Manual".
- The value of Capability_HDRMode is other than "Off".

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

- When the value set in the Custom setting menu [d. Shooting/display] – [d4. Shutter type] is "Electronic-front-curtain shutter".

The following cases, this capability is read only.

- The exposure mode is other than M,S.
- The value of Capability_SpotWBMode is 1(ON).
- When the exposure mode is "Manual", the value of Capabilty_EnableBracketing is "ON", and the value of Capabilty_BracketingVary is "AE only".

  *However, even when Capability_EnableBracketing is OFF, it may be read only. See EnableBracketing for details.

- The value of Capability_ RetractableLensWarningStatus is "True".
- When the memory card is write protected.
- During movie live view.

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

- When a sequence error has occurred.
- Aperture ring is not minimum.
- When an SB error has occurred.
- When the value of Capability_ExposureMode is other than Manual and a CPU lens is not attached.
- When the exposure mode is other than Manual and the value of Capability_RetractableLensWarningStatus is "True"

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.　　　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 other than "Program".

・　When an error preventing the setting of Flexible program has occurred.

・　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.

3.72.　　Aperture

This will set the aperture.

Capability　　kNkMAIDCapability_Aperture

Object types　　Source

ulType　　kNkMAIDCapType_Enum

　　　　kNkMAIDArrayType_PackedString

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

　　　　kNkMAIDCapOperation_Set

Data　　String of F value (e.g.) "1.4", "1.6", "1.8", "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 "--".

The following cases, this Capability is read only.

- ・ Lens is not set to minimum aperture(FEE, Aperture value error)
- ・ When a CPU lens is not attached.
- ・ When the exposure mode are except "A" and "M".
- ・ When the value of Capabilty_RetractableLensWarningStatus is "True".
- ・ When the value of Capabilty_SpotWBMode is "1(On)".
- ・ When the memory card is write protected.

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

- ・ When sequence error has occurred.
- ・ When an SB setting error has occured.
- ・ When the exposure mode is other than "Manual" and a CPU lens is not attached.
- ・ When the exposure mode is other than "Manual" and 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.

3.73.　　MeteringMode

This will get the metering mode.

Capability　　　kNkMAIDCapability_MeteringMode

Object types　　Source

ulType　　　　　kNkMAIDCapType_Unsigned

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

　　　　　　　　　kNkMAIDCapOperation_GetDefault

Data　　　　　　one of eNkMAIDMeteringMode

　　　　　　　0: Matrix

　　　　　　　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.
- ・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.

3.74. ExposureMode

This will select the exposure mode.

Capability   kNkMAIDCapability_ExposureMode

Object types   Source

ulType   kNkMAIDCapType_Enum

                kNkMAIDArrayType_Unsigned

ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

                kNkMAIDCapOperation_Set

Data   one of eNkMAIDExposureMode

         0: Program mode

         1: Aperture priority

         2: Speed priority

         3: Manual

         5: Auto

         14: SCENE

         15: U1(UserMode1)

         16: U2(UserMode2)

         17: EFFECTS

If the exposure mode is set to "14: SCENE", the scene mode set by Capability_SceneMode will be used.

If the exposure mode is set to "17: EFFECTS", the effect mode set by Capability_EffectMode will be used.

If the exposure mode is set to "15: U1(UserMode1)" or "16:U2(UserMode2)", the exposure mode set by Capability_UserMode1 or Capability_UserMode2 will be used.

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

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.

3.75. 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 other than P,S,A,M and a CPU lens is not attached.
- ・　　When the exposure mode is "Auto"
- ・　　When the memory card is write protected.

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. ShootingMode

This will set the value of "Release mode" from the Photo shooting menu.

Capability　　kNkMAIDCapability_ShootingMode

Object types　　Source

ulType　　kNkMAIDCapType_Enum

　　　　　　kNkMAIDArrayType_Unsigned

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

　　　　　　kNkMAIDCapOperation_Set

Data　　　　one of eNkMAIDShootingMode

　　　　　　0: Single frame

　　　　　　1: Continuous L

　　　　　　2: Continuous H

　　　　　　3: Self-timer

　　　　　　11: Continuous H (extended)

During continuous shooting, the maximum number of shots that can be taken in one burst is equal to the lowest of the following values:

- Capability_ContinousShootingNum
- Capability_RemainContinuousShooting

Further, depending on the release mode and the camera state, the number of possible shots can vary:

Release mode	BurstNumber	Number of shots
Single frame	Disabled	Only 1.
Continuous L Continuous H Continuous H (extended)	Enabled	- The capture of new objects is possible until the number of shots reaches the lowest of the following values: the BurstNumber value, the maximum number of objects that can be transferred to the SDRAM (calculated by the camera), or the number of shots remaining during bracket shooting. - If the internal flash is in a state in which it can be fired, or if HDR mode is active, only 1 shot is possible.
Self-timer	Disabled	Only 1. On release, the value is temporarily set to Single frame.

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.

3.77.　　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.

3.78.　　FocusAreaMode

This will set the photo shooting AF area mode.

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, AF-A
Single AF	"Single"	MF, AF-S, AF-C, AF-A
Auto-areaAF	"Auto"	AF-S, AF-C, AF-A
Pinpoint AF	"Pinpoint"	AF-S
Wide-area AF(S)	"Wide(S)"	AF-S, AF-C, AF-A
Wide-area AF(L)	"Wide(L)"	AF-S, AF-C, AF-A

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.

This Capability does not represent the current setting value, but the camera 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, the value "Pinpoint AF" is not listed:

　　　・　When the exposure mode is EFFECTS.

The following cases, this Capability is read only

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

　　　・　During movie file recording.

　　　・　When the exposure mode is Auto.

　　　・　When the exposure mode is EFFECTS (Miniature effect/Photo illustration).

　　　・　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.

3.79. EnableBracketing

This will set whether bracketing is applied or not.

Capability   kNkMAIDCapability_EnableBracketing

Object types   Source

ulType   kNkMAIDCapType_Boolean

ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,

               kNkMAIDCapOperation_GetDefault

Data   True: ON   False: OFF

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

- When the value of Capabilty_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 Capabilty_HDRMode is other than "OFF".
- The value of Capability_SpotWBMode is 1(ON).
- When the exposure mode is other than P,S,A,M.
- During movie file recording.

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

- When the value of Capabilty_BracketingVary is "White Balance" and the value of Capabilty_CompressionLevel is "RAW", "RAW+JPEG",.

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.

3.80. AEBracketingStep

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

Capability   kNkMAIDCapability_AEBracketingStep

Object types   Source

ulType   kNkMAIDCapType_Enum

                  kNkMAIDArrayType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

                  kNkMAIDCapOperation_Set

Data   one of eNkMAIDAEBracketingStep

                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 Capabilty_BracketingVary is "White Balance" or "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.

3.81.　　WBBracketingStep

This will set the white balance increment for WB bracketing.

Capability　　　kNkMAIDCapability_WBBracketingStep

Object types　　Source

ulType　　　　kNkMAIDCapType_Enum

　　　　　　　　kNkMAIDArrayType_Unsigned

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

　　　　　　　　kNkMAIDCapOperation_Set

Data　　　　　　one of eNkMAIDWBBracketingStep

　　　　　　　0: 1Step　　1: 2Step　　2: 3Step

The following cases, this Capability is read only

　　　　・　　When the value of Capabilty_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 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.

3.82.　　　BracketingType

This will set the bracketing shots and direction during AE bracketing and White balance bracketing.

Capability　　　kNkMAIDCapability_BracketingType

Object types　　Source

ulType　　　kNkMAIDCapType_Enum

　　　　　　kNkMAIDArrayType_Unsigned

ulOperations　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

　　　　　　kNkMAIDCapOperation_Set

Data　　　　one of eNkMAIDBracketingType

　　　　　　0: Minus_2

　　　　　　1: Plus_2

　　　　　　2: Minus_3

　　　　　　3: Plus_3

　　　　　　4: Both_3

　　　　　　5: Both_5

　　　　　　6: Both_7

　　　　　　7: Both_9

　　　　　　8: None_0

When Capability_BracketingVary is "AE 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.

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.

3.83. ADLBracketingType

This will set the bracketing shots when ADL bracketing.

Capability   kNkMAIDCapability_ADLBracketingType

Object types   Source

ulType   kNkMAIDCapType_Enum

                  kNkMAIDArrayType_Unsigned

ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

Data   one of eNkMAIDADLBracketingType

                0：2 shots(Off – UserSetting)

                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 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.

3.84.　　　ADLBracketingStep

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

Capability　　　　kNkMAIDCapability_ADLBracketingStep

Object types　　　Source

ulType　　　　　　kNkMAIDCapType_Unsigned

ulOperations　　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,

　　　　　　　　　　kNkMAIDCapOperation_GetDefault

Data　　　　　　　one of eNkMAIDADLBracketingStep

　　　　　　　　0: Auto

　　　　　　　　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.

3.85. 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.

3.86. 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.

3.87. 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.

3.88. RemainContinuousShooting

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

Capability   kNkMAIDCapability_RemainContinuousShooting

Object types   Source

ulType   kNkMAIDCapType_Unsigned

ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault

Data   0 – 360 (Default: 360)

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

- ・   Capability_CompressionLevel
- ・   Capability_ImageSize
- ・   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.

Further, the number of possible shots during continuous shooting can change due to the value of this Capability. For details, see Capability_ShootingMode.

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.

3.89. RemainCountInMedia

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

Capability　　　kNkMAIDCapability_RemainCountInMedia

Object types　　Source

ulType　　　　　kNkMAIDCapType_Unsigned

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault

Data　　　　　　0 - 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.

3.90. LockExposure

This will get lock status of auto exposure.

Capability　　　kNkMAIDCapability_LockExposure

Object types　　Source

ulType　　　　　kNkMAIDCapType_Boolean

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,

　　　　　　　　　kNkMAIDCapOperation_GetDefault

Data　　　　　　True: Lock　　　False: Unlock

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

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.

3.91.　　　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.

3.92.　　　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.

3.93.　　　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.

3.94. 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.

3.95.　FocalLength

This will get the focal length of the lens.

Capability　　　kNkMAIDCapability_FocalLength

Object types　　Source

ulType　　　　kNkMAIDCapType_Float

ulOperations　　kNkMAIDCapOperation_Get

Data　　　　lfValue (mm)

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

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.

3.96.　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

　　　　3: AF-A

　　　　4: AF-F

When no lens is attached, this Capability is always MF.

The value of 3(AF-A) can be got only during live view photography.

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.

3.97.　　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 "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. For details, see EnableBracketing.

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.　　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.

3.99. 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.

3.100.　　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-500	SB-80DX	SB-30	SB-9
SB-910	SB-400	SB-50DX	SB-29	SB-8
SB-900	SB-300	SB-28DX	SB-29S	SB-7
SB-800		SB-28D	SB-23	SB-6
SB-700		SB-28	SB-22	SB-5
SB-600		SB-27	SB-22S	SB-4
SU-800		SB-26	SB-21A	SB-3
		SB-25	SB-21B	SB-2
		SB-24	SB-20	SB-1
			SB-19	
			SB-18	
			SB-17	
			SB-16A	
			SB-16B	
			SB-15	
			SB-14	
			SB-12	
			SB-11	
			SB-10	
			SB-E	

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.　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.

3.102.　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.

3.103. 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.

If auto focus fails, the camera will either perform the capture or return an OutOfFocus error, depending on the values of Capability_FocusMode and Custom menu [a. Autofocus] – [a1. AF-C priority selection].

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 set to continuous shooting, refer to Capability_ShootingMode for the maximum number of shots possible.

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 Capabilty_ShutterSpeed is "Time".
- ・ When the value of Capabilty_ RetractableLensWarningStatus is "True".
- ・ When the value of Capability_SpotWBMode is 1(ON).

Result Codes

OutOfFocus	When the following all conditions are met. ・The AF operation mode is the focus priority. ・The AF operation is 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.
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 ・If 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	When shutterspeed is bulb.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.104.　ContrastAF

This will control contrast AF during live view.

Capability　　　kNkMAIDCapability_ContrastAF

Object types　　Source

ulType　　　　kNkMAIDCapType_Unsigned

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

　　　　　　　　one of eNkMAIDContrastAF

　　　　　　　　0x00: start AF (effective only as the Set value)

　　　　　　　　0x01: stop AF (effective only as the Set value)

　　　　　　　　0x10: AF finishes in focus (effective only as the Get value)

　　　　　　　　0x11: AF finishes out of focus (effective only as the Get value)

　　　　　　　　0x12: It is operating AF (effective only as the Get value)

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

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

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

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

　　　・　　When the value of Capabilty_FpcusMode is "MF".

　　　・　　When CPUlens is not attached

　　　・　　When the value of Capabilty_LiveViewStatus is "OFF".

　　　・　　When the value of Capabilty_ RetractableLensWarningStatus "True".

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.

3.105. 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 the ulOperations is set to invalid.

- 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.

3.106.　MFDrive

This will adjust focus position during live view.

Capability　　　　kNkMAIDCapability_MFDrive

Object types　　Source

ulType　　　　　kNkMAIDCapType_Unsigned

ulOperations　　kNkMAIDCapOperation_Set

Data　　　　　　one of eNkMAIDMFDrive

　　　　　　　0: infinity -> close

　　　　　　　1: close -> infinity

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

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 the ulOperations is set to invalid.

- ・　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.

3.107.   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 the ulOperations is set to invalid .

    ·   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.

3.108.　　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 kNkMAIDFileDataType_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_ 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.

3.109.　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 objcet. 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.

3.110.　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.

3.111.　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.

3.112.　　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 in "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.

3.112.1. LiveView data format

	Field	Size	Description
Braginavad	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 2:NORMAL 4:FINE
	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: 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	Not supported by Z 50
	Reserve		1Byte	
	Timecode status		1Byte	Not supported by Z 50
	Timecode count		1Byte	Not supported by Z 50

			1Byte	Not supported by Z 50
			1Byte	Not supported by Z 50
			1Byte	Not supported by Z 50
	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	Not supported by Z 50
	Reserve		95Byte	
Live view image	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 details for the value of the level angle information are as below.

■ Rolling

See AngleLevel.

■ Pitching

The data is in an signed fixed-point 32bit format, with the upper 16 bits representing the integer part, and the lower 16 bits representing the decimal part.

When the camera is horizontal, the angle is either 0.0° or 180.0°. The angle range is ±15° from 0.0° or 180.0°.

Camera position	Lens orientation	Angle range	Horizon
Horizontal	Up	0.0 ～ 60.0	0.0
	Down	0.0 , 359.9999847412109375 ～ 300.0	
Horizontal (upside down)	Up	180.0 ～ 120.0	180.0
	Down	180.0 ～ 240.0	

In the level display of the setup menu, the display becomes green if the angle value is horizontal. If the angle value after having added +0.5° and truncated the decimal part is equl to 0.0° or 180.0°, it is considered horizontal.

■ Yawing

The data is in an signed fixed-point 32bit format, with the upper 16 bits representing the integer part, and the lower 16 bits representing the decimal part.

When the camera is horizontal, the angle is either 0.0° or 180.0°. The angle range is ±15° from 0.0° or 180.0°.

Camera position	Lens orientation	Angle range	Horizon
Vertical (grip up)	Up	0.0 ～ 60.0	0.0
	Down	0.0 , 359.9999847412109375 ～ 300.0	
Vertical (grip down)	Up	180.0 ～ 120.0	180.0
	Down	180.0 ～ 240.0	

In the level display of the setup menu, the display becomes green if the angle value is horizontal. If the angle value after having added +0.5° and truncated the decimal part is equl to 0.0° or 180.0°, it is considered horizontal.

エラー! 参照元が見つかりません。

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.

3.113.　　GetVideoImageEx

This will get Movie image.

Capability	kNkMAIDCapability_GetVideoImageEx
Object types	Video
ulType	kNkMAIDCapType_Generic
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray
Data	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).

- ・ Card insertion/removal.
- ・ Starting movie recording.

- Starting movie playback.
- Execution of kNkMAIDCapOperation_Set on any Capability.
- Resetting a menu or white balance data.
- Capturing an image when the value of kNkMAIDCapability_SaveMedia is 0(Card) or 2(Card + SDRAM).
- Value change of kNkMAIDCapability_LockCamera.
- Value change of kNkMAIDCapability_MovRecInCardStatus.
- 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.

3.114. 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)

During autofocus or shooting, setting this Capability can fail.

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

3.115. CameraType

This will get the camera type.

Capability   kNkMAIDCapability_CameraType

Object types   Source

ulType   kNkMAIDCapType_Unsigned

ulOperations   kNkMAIDCapOperation_Get

Data   one of eNkMAIDCameraType

　　　　　　　0x4A: Z 50

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.

3.116.　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.

3.117.　　　AFModeAtLiveView

This will set the photo shooting focus mode (Photo shooting menu).

Capability　　　kNkMAIDCapability_AFModeAtLiveView

Object types　　Source

ulType　　　　　kNkMAIDCapType_Enum

　　　　　　　　　kNkMAIDArrayType_Unsigned

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

　　　　　　　　　kNkMAIDCapOperation_Set

Data　　　　　　one of eNkMAIDAFModeAtLiveView

　　　　　　　　　0: AF-S

　　　　　　　　　2: AF-F

　　　　　　　　　3: MF

　　　　　　　　　<u>5: AF-A</u>

　

This Capability does not represent the current setting value, but the camera control value.

※Regarding Enum Value: While the enumerated values can be set to the menu, it may not be used as the control value depending on the state of the camera. 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, "0: AF-S" is not listed.
- When the exposure mode is Auto

The following cases, "1: AF-C" is not listed.
- When the exposure mode is Auto.
- When the exposure mode is EFFECTS(Miniature effect/Photo illustration).

The following case, "5: AF-A" is not listed.
- When the exposure mode is EFFECTS(Miniature effect/Photo illustration).

The following cases, this Capability is read only.
- When the value of Capability_SpotWBMode is 1(ON).
- During movie 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.

3.118. MovRecInCardStatus

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

Capability	kNkMAIDCapability_MovRecInCardStatus
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
Data	one of eNkMAIDMovRecInCardStatus

           <u>0: OFF</u>

           1: ON

When the client starts movie recording to the memory 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).

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, the ulOperations of this capability cannot be performed.

- 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.

3.119. 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
0x00002000	Capability_LiveViewSelector is 0 (live view photography)
0x00001000	During enlarged display of Live view
0x00000800	Card is write protected.
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

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.

3.120.　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.

3.121. 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.

3.122. 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.

3.123. 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 bulb 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.

3.124.　　　　LiveViewSelector

This will set live view photography or movie live view.

Capability　　　　kNkMAIDCapability_LiveViewSelector

Object types　　Source

ulType　　　　kNkMAIDCapType_Enum

　　　　　　　　kNkMAIDArrayType_Unsigned

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

　　　　　　　　kNkMAIDCapOperation_Set

Data　　　　　one of eNkMAIDLiveViewSelector

　　　　　　　0: live view photography

　　　　　　　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.

3.125.　　ResetWBMode

This will reset the white balance adjustment of Capability_WBMode.

Capability　　　　kNkMAIDCapability_ResetWBMode

Object types　　Source

ulType　　　　kNkMAIDCapType_Process

ulOperations　　kNkMAIDCapOperation_Start

Data　　　　　none

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

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

・　　During movie file recording.

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.

3.126.   MovieShutterSpeed

This will set the shutter speed during movie live view

Capability	kNkMAIDCapability_MovieShutterSpeed
Object types	Source
ulType	kNkMAIDCapType_Enum
	kNkMAIDArrayType_PackedString
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
	kNkMAIDCapOperation_Set
Data	Strings of shutter time in second. (e.g.) "1/30", "1/40", "1/50"
	(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 memory card is write protected.
- 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 a sequence error has occurred.
- When an SB 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.

3.127.　　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 a CPU lens is not attached, this capability returns “--”.

When the camera is not in the movie live view state, 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 CPUlens is not attached
- When sequence error has occurred.
- 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 an SB error has occurred.
- When the value of Capabilty_ RetractableLensWarningStatus is “True: Warning about retraction”
- When the memory card is write protected.

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. 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
<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	<u>100</u>, 140, 200, 280, 400, 560, 800, 1100, 1600, 2200, 3200, 4500, 6400, 9000, 12800, 18000, 25600

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.

3.129.　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 other than P,S,A,M and a CPU lens is not attached.
- ・　　When the exposure mode is Auto.
- ・　　When the memory card is write protected.

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.

3.130.　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 – 40 (Default: 40)

3.131.　　RetractableLensWarningStatus

This will get the status of RetractableLensWarning.

Capability　　　　kNkMAIDCapability_RetractableLensWarningStatus

Object types　　Source

ulType　　　　　kNkMAIDCapType_Boolean

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault

Data　　　　　True: Warning about retraction

　　　　　　　　False: Not warning about retraction

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. MovieWindNoiseReduction

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

Capability　　　　kNkMAIDCapability_MovieWindNoiseReduction

Object types　　　Source

ulType　　　　　　kNkMAIDCapType_Unsigned

ulOperations　　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault,
　　　　　　　　　　　kNkMAIDCapOperation_Set

Data　　　　　　　one of eNkMAIDMovieWindNoiseReduction
　　　　　　　　　　　0: OFF
　　　　　　　　　　　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)".
- ・　When the exposure mode is EFFECTS(Miniature effect).

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. MovieRecordingZone

This will set " Frequency response". (Movie Shooting Menu)

Capability   kNkMAIDCapability_MovieRecordingZone

Object types   Source

ulType   kNkMAIDCapType_Unsigned

ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault,

kNkMAIDCapOperation_Set

Data   one of eNkMAIDMovieRecordingZone

0: Wide range

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)".
- When the exposure mode is EFFECTS(Miniature effect).

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.

3.134. MovieISOControl

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

Capability   kNkMAIDCapability_MovieISOControl

Object types   Source

ulType   kNkMAIDCapType_Boolean

ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,
                    kNkMAIDCapOperation_GetDefault

Data   True: On   <u>False: Off</u>

The following cases, this Capability is read only.

- ・   When the value of Capability_SpotWBMode is 1(ON).
- ・   During movie file recording, 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.

3.135. 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	○	×
<u>33</u>	<u>25600</u>	○	○

The values which can be set up may vary depending on the value of Capability_EVInterval.

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.

3.136.　　　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	•If you run the Operation that it is not supported against Capability. • When the following all conditions will be met. 　-　　The ulPicCtrlItem is the Custom Picture Control. 　-　　The bModifiedFlag is true. 　-　　The ulPicCtrlItem and the BasePictureControl of the Picture Control Data do not match. •If the unsupported value has been set to the Picture Control data. •If the invalid Picture Control data is specified.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.137.　　　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.

3.138.　　MovieWBMode

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

Capability　　　kNkMAIDCapability_MovieWBMode

Object types　　Source

ulType　　　　　kNkMAIDCapType_Enum

　　　　　　　　　　kNkMAIDArrayType_PackedString

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

　　　　　　　　　　kNkMAIDCapOperation_Set

Data　　　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".
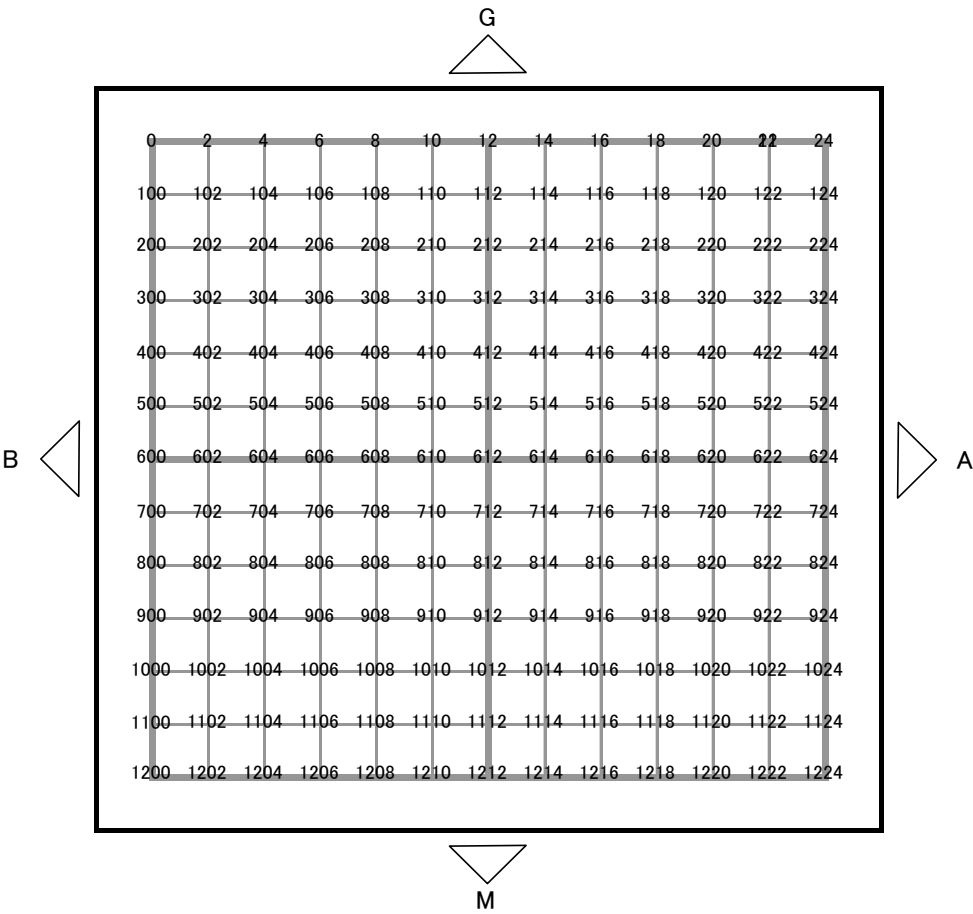
Result Codes

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.

3.139.　MovieWBTuneAuto

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

Capability　　　　kNkMAIDCapability_MovieWBTuneAuto

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.

3.140.   MovieWBAutoType

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

Capability   kNkMAIDCapability_MovieWBAutoType

Object types   Source

ulType   kNkMAIDCapType_Unsigned

ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,

kNkMAIDCapOperation_GetDefault

Data   one of eNkMovieWBAutoType

1 : Keep warm lighting colors

2 : Keep white(reduce warm colors)

3: Keep atmosphere

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.

3.141. MovieWBTuneIncandescent

This will set the white balance adjustment when the WBMode is "Incandescent".

(Movie Shooting Menu)

Capability kNkMAIDCapability_MovieWBTuneIncandescent

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 MovieWBTuneAuto.

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.

3.142. 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.

3.143. MovieWBTuneFluorescent

This will set the white balance adjustment when the WBMode is "Fluorescent".

(Movie Shooting Menu)

Capability   kNkMAIDCapability_MovieWBTuneFluorescent

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 MovieWBTuneAuto.

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.

3.144. MovieWBTuneSunny

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

(Movie Shooting Menu)

Capability	kNkMAIDCapability_MovieWBTuneSunny
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 MovieWBTuneAuto.

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.

3.145. MovieWBTuneShade

This will set the white balance adjustment when the WBMode is "Shade".

(Movie Shooting Menu)

Capability   kNkMAIDCapability_MovieWBTuneShade

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 MovieWBTuneAuto.

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.

3.146.　MovieWBTuneCloudy

This will set the white balance adjustment when the WBMode is "Cloudy".

(Movie Shooting Menu)

Capability	kNkMAIDCapability_MovieWBTuneCloudy
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 MovieWBTuneAuto.

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.

3.147.　　MovieWBTuneColorTempEx

This will set the color temperature when the WBMode is "Color Temperature".

(Movie Shooting Menu)

Capability　　　kNkMAIDCapability_MovieWBTuneColorTempEx

Object types　　Source

ulType　　　　　kNkMAIDCapType_Range

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

Data　　　　　　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 MovieWBTuneAuto.

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.

3.148. MovieWBTuneColorAdjust

This will set the white balance adjustment when the WBMode is "Color Temperature".

(Movie Shooting Menu)

Capability   kNkMAIDCapability_MovieWBTuneColorAdjust
Object types   Source
ulType   kNkMAIDCapType_Range
ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set
Data   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 MovieWBTuneAuto.

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.

3.149. MovieWBTuneNatural

This will set the white balance adjustment when the WBMode is "Natural" (Movie Shooting Menu).

Capability   kNkMAIDCapability_MovieWBTuneNatural
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 MovieWBTuneAuto.

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.

3.150. MovieWBTunePreset1

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

(Movie Shooting Menu)

Capability   kNkMAIDCapability_MovieWBTunePreset1

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 MovieWBTuneAuto.

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_MovieWbTunePresetProtect1 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.

3.151. MovieWBTunePreset2

This will set the white balance adjustment when the WBMode is "Preset2".

(Movie Shooting Menu)

Capability	kNkMAIDCapability_MovieWBTunePreset2
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 MovieWBTuneAuto.

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_MovieWbTunePresetProtect2 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.

3.152.　　MovieWBTunePreset3

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

(Movie Shooting Menu)

Capability	kNkMAIDCapability_MovieWBTunePreset3
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 MovieWBTuneAuto.

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_MovieWbTunePresetProtect3 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.

3.153.　　　MovieWBTunePreset4

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

(Movie Shooting Menu)

Capability	kNkMAIDCapability_MovieWBTunePreset2
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 MovieWBTuneAuto.

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_MovieWbTunePresetProtect4 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.

3.154. MovieWBTunePreset5

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

(Movie Shooting Menu)

Capability	kNkMAIDCapability_MovieWBTunePreset5
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 MovieWBTuneAuto.

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_MovieWbTunePresetProtect5 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.

3.155. MovieWBTunePreset6

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

(Movie Shooting Menu)

Capability	kNkMAIDCapability_MovieWBTunePreset6
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 MovieWBTuneAuto.

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_MovieWbTunePresetProtect6 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.

3.156.　　　MovieWBPresetProtect1

This will set the protection of white balance preset 1. (Movie Shooting Menu)

Capability　　　　kNkMAIDCapability_MovieWBPresetProtect1

Object types　　　Source

ulType　　　　　　kNkMAIDCapType_Unsigned

ulOperations　　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault,

　　　　　　　　　　kNkMAIDCapOperation_Set

Data　　　　　　　one of eNkMAIDMovieWBPresetProtect1

　　　　　　　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.

3.157.　MovieWBPresetProtect2

This will set the protection of white balance preset 2. (Movie Shooting Menu)

Capability　　　kNkMAIDCapability_MovieWBPresetProtect2

Object types　　Source

ulType　　　　kNkMAIDCapType_Unsigned

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault,

　　　　　　　　kNkMAIDCapOperation_Set

Data　　　　　　one of eNkMAIDMovieWBPresetProtect2

　　　　　　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.

3.158.　　MovieWBPresetProtect3

　This will set the protection of white balance preset 3. (Movie Shooting Menu)

Capability　　　kNkMAIDCapability_MovieWBPresetProtect3

Object types　　Source

ulType　　　　kNkMAIDCapType_Unsigned

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault,

　　　　　　　　kNkMAIDCapOperation_Set

Data　　　　　one of eNkMAIDMovieWBPresetProtect3

　　　　　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.

3.159.　　MovieWBPresetProtect4

This will set the protection of white balance preset 4. (Movie Shooting Menu)

Capability　　　kNkMAIDCapability_MovieWBPresetProtect4

Object types　　Source

ulType　　　　kNkMAIDCapType_Unsigned

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault,

　　　　　　　　kNkMAIDCapOperation_Set

Data　　　　　one of eNkMAIDMovieWBPresetProtect4

　　　　　　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.

3.160.　　MovieWBPresetProtect5

This will set the protection of white balance preset 5. (Movie Shooting Menu)

Capability　　　kNkMAIDCapability_MovieWBPresetProtect5

Object types　　Source

ulType　　　　kNkMAIDCapType_Unsigned

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault,

　　　　　　　　kNkMAIDCapOperation_Set

Data　　　　　one of eNkMAIDMovieWBPresetProtect5

　　　　　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.

3.161.   MovieWBPresetProtect6

This will set the protection of white balance preset 6. (Movie Shooting Menu)

Capability   kNkMAIDCapability_MovieWBPresetProtect6

Object types   Source

ulType   kNkMAIDCapType_Unsigned

ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault,

kNkMAIDCapOperation_Set

Data   one of eNkMAIDMovieWBPresetProtect6

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.

3.162.　　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.

3.163.　　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.

3.164.　　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
	1: ON (Default)
	2: ON (High)
	3: ON (Low)

The following cases, this Capability is read only.

・　During movie file recording.
・　When Capability_SpotWBMode is 1(ON).
・　When the exposure mode is EFFECTS(Night vision).

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. MoviePictureControl

This will set Picture Control. (Movie Shooting Menu)

Capability	kNkMAIDCapability_MoviePictureControl
ulType	kNkMAIDCapType_Enum
	kNkMAIDArrayType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
	kNkMAIDCapOperation_Set
Data	one of eNkMAIDMoviePictureControl

1: Standard

2: Neutral

3: Vivid

4: Monochrome

5: Portrait

6: Landscape

7: Flat

8: Auto

100: Same as photo settings

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.

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.

3.166.   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 NkMAIDISOControlSensitivity6

NkMAIDISOControlSensitivity6	ISO	NkMAIDISOControlSensitivity6	ISO
100	ISO100	10000	ISO10000
110	ISO110	11400	ISO11400
125	ISO125	12800	ISO12800
140	ISO140	14400	ISO14400
160	ISO160	16000	ISO16000
180	ISO180	18000	ISO18000
200	ISO200	20000	ISO20000
220	ISO220	22800	ISO22800
250	ISO250	25600	ISO25600
280	ISO280	28800	ISO28800
320	ISO320	32000	ISO32000
360	ISO360	36000	ISO36000
400	ISO400	40000	ISO40000
450	ISO450	45600	ISO45600
500	ISO500	51200	ISO51200
560	ISO560	57600	Hi0.2
640	ISO640	64000	Hi0.3
720	ISO720	72000	Hi0.5
800	ISO800	81200	Hi0.7
900	ISO900	91200	Hi0.8
1000	ISO1000	102400	Hi1.0
1100	ISO1100	115000	Hi1.2
1250	ISO1250	128000	Hi1.3
1400	ISO1400	144000	Hi1.5
1600	ISO1600	162000	Hi1.7
1800	ISO1800	182000	Hi1.8
2000	ISO2000	204800	Hi2.0
2200	ISO2200	230000	Hi2.2
2500	ISO2500	256000	Hi2.3
2800	ISO2800	288000	Hi2.5
3200	ISO3200	324000	Hi2.7
3600	ISO3600	364000	Hi2.8
4000	ISO4000	409600	Hi3.0
4500	ISO4500	460000	Hi3.2
5000	ISO5000	512000	Hi3.3
5600	ISO5600	576000	Hi3.5
6400	ISO6400	648000	Hi3.7
7200	ISO7200	728000	Hi3.8
8000	ISO8000	820000	Hi4.0
9000	ISO9000		

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.　　　MovieMeteringMode

This will set "Metering".(Movie Shooting Menu)

Capability　　　　kNkMAIDCapability_MovieMeteringMode

Object types　　　Source

ulType　　　　　　kNkMAIDCapType_Unsigned

ulOperations　　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

　　　　　　　　　　kNkMAIDCapOperation_GetDefault

Data　　　　　　　one of eNkMAIDMovieMeteringMode

　　　　　　　　　　<u>0: Matrix</u>

　　　　　　　　　　1: Center weighted

　　　　　　　　　　2: Highlight

The following cases, this Capability is read only.

　　　　・　　　During movie file recording.

　　　　・　　　The value of Capability_SpotWBMode is 1(ON).

　　　　・　　　The exposure mode is other that P,S,A,M.

　　　　・　　　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.

3.168.　LiveViewImageSize

This will set the size for Live View image

Capability　　　kNkMAIDCapability_LiveViewImageSize

Object types　　Source

ulType　　　　　kNkMAIDCapType_Enum

　　　　　　　　　kNkMAIDArrayType_Unsigned

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

　　　　　　　　　kNkMAIDCapOperation_Set

Data　　　　　　one of eNkMAIDLiveViewImageSize

　　　　　　　　　1: QVGA

　　　　　　　　　<u>2: VGA</u>

　　　　　　　　　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.

3.169. SpotWBMode

This will set the ON / OFF state of waiting to acquire SpotWB.

Capability	kNkMAIDCapability_SpotWBMode
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,
	kNkMAIDCapOperation_GetDefault
Data	one of eNkMAIDSpotWBMode
	0: OFF
	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 aquire 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 photograhy".
- The value of Capabilty_LiveViewStatus is other than ""3:ON(Remote live view)".
- During movie file recording.
- The value of Capabilty_HDRMode is other than "0: OFF".
- The value of Capability_MovieWBMode is other than "Preset1~6" or "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 other than "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_ExposureMode is one of the following values.
  - 5: Auto
  - 14: SCENE
  - 15: U1(UserMode1)

- 16: U2(UserMode2)
- 17: EFFECTS

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.

3.170.　　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.

3.171.   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.

3.172.　　SpotWBResultDispEnd

This capability releases the display of SpotWB result.

Capability　　　　kNkMAIDCapability_SpotWBResultDispEnd

Object types　　　Source

ulType　　　　　　kNkMAIDCapType_Process

ulOperations　　　kNkMAIDCapOperation_Start

Data　　　　　　　None

By executing this capability, the value of the "SpotWB status", retrieved by GetLiveViewImage, is modified as follows.

　　　　3: 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.

3.173.　　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(Basic/Normal/Fine)".

Capability　　　kNkMAIDCapability_RawJpegTransferStatus

Object types　　Source

ulType　　　　　kNkMAIDCapType_ Boolean

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,

　　　　　　　　　kNkMAIDCapOperation_GetDefault

Data　　　　　　True　：JPEG only

　　　　　　　　　False　：RAW & JPEG

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.

3.174. 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 Capability_ShootingMode is set to continuous shooting, refer to Capability_ShootingMode for the maximum number of shots possible.

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 shootng 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 Capabilty_ShutterSpeed is "Time".
- When the value of Capabilty_RetractableLensWarningStatus is "True".
- When the value of Capabilty_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.
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 ・If 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.

3.175.　　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.

If auto focus failes, the camera will either perform the capture or return an OutOfFocus error, depending on the values of Capability_FocusMode and Custom menu [a. Autofocus] – [a1. AF-C priority selection].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 set to continuous shooting, refer to Capability_ShootingMode for the maximum number of shots possible.

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".

Result Codes

OutOfFocus	When the following all conditions are met. ・AF mode of operation is the focus priority. ・The AF operation is 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.
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 ・If 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.

3.176.　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	・If the camera is in the Busy state. ・During the camera is operating by Capability_CaptureAsync or Capability_AFCaptureAsync
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.

3.177.　ElectronicVR

This will set "Electric VR". (Movie Shooting Menu)

Capability	kNkMAIDCapability_ElectronicVR
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault,
	kNkMAIDCapOperation_Set
Data	one of eNkMAIDElectronicVR
	0: OFF
	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".
- ・　When the exposure mode is EFFECTS.

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. MovieActive_D_Lighting

This will set "Active D-Lighting". (Movie Shooting Menu)

Capability	kNkMAIDCapability_MovieActive_D_Lighting
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
Data	one of eNkMAIDMovieActive_D_Lighting
	0: Off
	1: Low
	2: Normal
	3: High
	4: Extra high
	5: Same as photo setting

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.

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.

3.179.　FlickerReductionSetting

This will set "Flicker reduction shooting"(Photo Shooting Menu).

Capability　　　kNkMAIDCapability_FlickerReductionSetting

Object types　　Source

ulType　　　　kNkMAIDCapType_Unsigned

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,

　　　　　　　　kNkMAIDCapOperation_GetDefault

Data　　　　　one of eNkMAIDFlickerReductionSetting

　　　　　　　　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 value of Custom setting menu [d. Shooting/display] – [d3. Exposure delay mode] is other than OFF.
- ・　　The value of Capability_HDRMode is other than 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.

3.180.　SBIntegrationFlashReady

This will get the information about the ready state of the external flash displayed in the flash info of the INFO display.

Capability　　　kNkMAIDCapability_SBIntegrationFlashReady

Object types　　Source

ulType　　　　kNkMAIDCapType_Enum

　　　　　　　　kNkMAIDArrayType_Unsigned

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray

Data　　　　　one of eNkMAIDSBIntegrationFlashReady

　　　　　　　　0: Uncharged

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.

3.181.　　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
	0: OFF
	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.

3.182.　HighlightBrightness

This will set "Highlight brightness". (Custom Setting Menu g6)

Capability　　　　kNkMAIDCapability_HighlightBrightness

Object types　　　Source

ulType　　　　　　kNkMAIDCapType_Enum

　　　　　　　　　　kNkMAIDArrayType_Unsigned

ulOperations　　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

　　　　　　　　　　kNkMAIDCapOperation_Set

Data　　　　　　　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.

・　When the value of Custom setting menu [d. Shooting/display] – [d9. Peaking highlights – Peaking level] is other than 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.

3.183. MovieAttenuator

This will set "Attenuator". (Movie Shooting Menu)

Capability   kNkMAIDCapability_MovieAttenuator

Object types   Source

ulType   kNkMAIDCapType_Enum

                     kNkMAIDArrayType_Unsigned

ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

                     kNkMAIDCapOperation_Set

Data   one of eNkMAIDMovieAttenuator

       0: Disable

       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)".
- When the exposure mode is EFFECTS(Miniature effect).

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.　SaveCameraSetting

Save camera settings

Capability	kNkMAIDCapability_SaveCameraSetting
Object types	Source
ulType	kNkMAIDCapType_Process
ulOperations	kNkMAIDCapOperation_Start
Data	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 other Capabilities cannot be operated. Further, the camera operations other than camera power OFF should not be performed.

After operating this Capability, the remote live view is ended.

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	・If you run the Operation that it is not supported against Capability. ・If the setting of the camera cannot be saved.
DeviceBusy	If the camera is in the Busy state.(included during shooting)
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.185. MovieFileType

This will set movie file type. (Movie Shooting Menu)

Capability	kNkMAIDCapability_MovieFileType
Object types	Source
ulType	kNkMAIDCapType_Enum
	kNkMAIDArrayType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
	kNkMAIDCapOperation_Set
Data	one of eNkMAIDMovieFileType
	0: MOV
	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.

3.186. InternalFlashComp

This will set "Frash compensation" in units of 1/6 EV (Photo Shooting Menu).

Capability   kNkMAIDCapability_InternalFlashComp

Object types   Source

ulType   kNkMAIDCapType_Range

ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

Data   -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 is Auto or EFFECTS.
- ・ When the value of Capability_ShootingMode is 11"Continuous H(extended)".
- ・ During acquisition of image dust off data.

Result Codes

ValueOutOfBounds	・If an out-of-range value has been set. ・If the value that cannot set is set to this capability according to the EVInterval setting.
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.   GetRecordingInfo

This will get the information of movie recording.

Capability	kNkMAIDCapability_GetRecordingInfo
Object types	Video
ulType	kNkMAIDCapType_Generic
ulOperations	kNkMAIDCapOperation_Get
Data	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 divied 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
      ullTotalMovCount = 2
      ullTotalMovSize = 6442450944 (6GB)
  * 2nd VideoObject
      ulIndexOfMov = 1
      ullTotalMovCount = 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.

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.

3.188.　　　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

　　　　　　　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.

3.189.　　　VibrationReduction

This will set "Optical VR" of the 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

　　　　　　　If the lens has Normal and Sport anti-vibration modes.

0: OFF

1: Normal

2: Sport

If the lens only has Normal anti-vibration mode.

0: OFF

1: ON

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 a VR lens with an image stabilization switch is attached to the camera.

・When a VR lens is not 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.

3.190. MovieAutoDistortion

This will set "Auto distortion control" of Movie Shooting Menu.

Capability　　　kNkMAIDCapability_MovieAutoDistortion

Object types　　Source

ulType　　　　　kNkMAIDCapType_Enum

　　　　　　　　　kNkMAIDArrayType_Unsigned

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

　　　　　　　　　kNkMAIDCapOperation_Set

Data　　　　　　one of eNkMAIDMovieAutoDistortion

　　　　　　　　　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.

・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.

3.191.　　　MovieAfAreaMode

This will set "AF-area mode" of Movie Shooting Menu.

Capability　　　　kNkMAIDCapability_MovieAfAreaMode

Object types　　　Source

ulType　　　　　　kNkMAIDCapType_Enum

　　　　　　　　　　kNkMAIDArrayType_PackedString

ulOperations　　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

　　　　　　　　　　kNkMAIDCapOperation_Set

Data

Menu	String	Capability_MovieFocusMode
Single-point AF	"Single"	MF, AF-S, AF-C, AF-F
Auto-area AF	"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.

This Capability does not represent the current setting value, but the camera 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 the exposure mode is Auto or EFFECTS(Miniature effect/Photo illustration).
- 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.

3.192.　　　MovieVibrationReduction

This will set "Optical VR" of the Movie shooting menu

Capability　　　kNkMAIDCapability_MovieVibrationReduction

Object types　　Source

ulType　　　kNkMAIDCapType_Enum

　　　　　　kNkMAIDArrayType_Unsigned

ulOperations　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

　　　　　　kNkMAIDCapOperation_Set

Data　　　 one of eNkMAIDMovieVibrationReduction

If the lens has Normal and Sport anti-vibration modes.

0: OFF

1: Normal

2: Sport

100: Same as photo setting

If the lens only has Normal anti-vibration mode.

0: OFF

1: ON

100: Same as photo setting

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 a VR lens with an image stabilization switch is attached to the camera.

・When a VR lens is not 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.

3.193.　　　MovieFocusMode

This will set the focus mode for movie (Movie Shooting Menu).

Capability　　　　kNkMAIDCapability_MovieFocusMode

Object types　　　Source

ulType　　　　　　kNkMAIDCapType_Enum

　　　　　　　　　　kNkMAIDArrayType_Unsigned

ulOperations　　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

　　　　　　　　　　kNkMAIDCapOperation_Set

Data　　　　　　　one of eNkMAIDMovieFocusMode

　　　　　　　　　　0: AF-S

　　　　　　　　　　1: AF-C

　　　　　　　　　　2: AF-F

　　　　　　　　　　4: MF

This Capability does not represent the current setting value, but the camera 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, "0: AF-S" is not listed

・　When the exposure mode is Auto.

The following cases, "1: AF-C" is not listed.

・　When the exposure mode is Auto.

- When the exposure mode is EFFECTS(Miniature effect/Photo illustration).
The following case, "2:AF-F" is not listed.
- When the exposure mode is EFFECTS(Miniature effect/Photo illustration).
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.

3.194.   MovieVignetteControl

This will set "Vignette control" of Movie Shooting Menu.

Capability   kNkMAIDCapability_MovieVignetteControl

Object types   Source

ulType   kNkMAIDCapType_Enum

                        kNkMAIDArrayType_Unsigned

ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

                        kNkMAIDCapOperation_Set

Data   one of eNkMAIDMovieVignetteControl

                        0: OFF

                        1: Low

                        2: Normal

                        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.

3.195. MovieDiffractionCompensation

This will set "Diffraction compensation" of Movie Shooting Menu.

Capability   kNkMAIDCapability_MovieDiffractionCompensation

Object types   Source

ulType   kNkMAIDCapType_Enum

                    kNkMAIDArrayType_Unsigned

ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

                    kNkMAIDCapOperation_Set

Data   one of eNkMAIDMovieDiffractionCompensation

                    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.

3.196. LiveViewImageStatus

This will get the state of the live view image to be acquired with
Capability_GetLiveViewImage.

Capability   kNkMAIDCapability_LiveViewImageStatus

Object types   Source

ulType   kNkMAIDCapType_Enum

                    kNkMAIDArrayType_Unsigned

ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray

Data   one of eNkMAIDLiveViewImageStatus

                    0: 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.

3.197.　　　　LiveViewZoomArea

This will set the zoom area of live view image.

Capability　　　　kNkMAIDCapability_LiveViewZoomArea

Object types　　　Source

ulType　　　　　kNkMAIDCapType_Enum

　　　　　　　　　kNkMAIDArrayType_Unsigned

ulOperations　　　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

　　　　　　　　　kNkMAIDCapOperation_Set

Data　　　　　　one of eNkMAIDLiveViewZoomArea

eNkMAIDLiveViewZoomArea	Display device		Contents
	Tilting monitor	Viewfinder	
0	○	○	full screen
360	○	—	MagnifyRange 　　　: 360 x 240 Magnification 　　　: High(200%)
512	—	○	MagnifyRange 　　　: 512 x 342 Magnification 　　　: High(200%)
720	○	—	MagnifyRange 　　　: 720 x 480 Magnification 　　　: actual (100%)
1024	—	○	MagnifyRange 　　　: 1024 x 682 Magnification 　　　: actual (100%)
1448	○	○	MagnifyRange 　　　: 1448 x 964 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, "360: 360 x 240" and "512: 512 x 342" are not listed
・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	・If you run the Operation that it is not supported against Capability. ・When the camera is shooting.
DeviceBusy	If the camera is in the Busy state.
UnexpectedError	By the unexpected error, if it fails to execute the command.

3.198.　　　　TrackingAFArea

During remote live view, this will start tracking operation at the auto area AF mode or change the selected face,

Capability　　　　kNkMAIDCapability_TrackingAFArea

Object types　　　Source

ulType　　　　　　kNkMAIDCapType_Generic

ulOperations　　　kNkMAIDCapOperation_Set

Data　　　　　　　pointer to NkMAIDTrackingAFArea structure

　　　　　　　　　　typedef struct tagNkMAIDTrackingAFArea
　　　　　　　　　　{
　　　　　　　　　　　　ULONG　ulTrackingStatus;　　　------1: Start tracking / 0: Stop tracking
　　　　　　　　　　　　NkMAIDPoint stAfPoint;　　　　------ The coordinates of the AF area
　　　　　　　　　　　　　　　　　　　　　　　　　　（※Used only when ulTrackingStatus = 1)
　　　　　　　　　　} NkMAIDTrackingAFArea, FAR* LPNkMAIDTrackingAFArea;

When starting the tracking operation, set ulTrackingStatus to 1 and set the AF area with a focus on the coordinates specified by X (X axis coordinates) and Y (Y choosing axis coordinates) of the NkMAIDPoint structure. (please refer Capability_ContrastAFArea)

The value range of X and Y is defined by "total size" of "Display information" in live view header get by Capability_GetLiveViewImage.

However 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 over the range that can be set to X and Y, the value changed to maximum or minimum will be set.

When stopping the tracking operation, set to 0 for ulTrackingStatus. And then NkMAIDPoint structure is not used.

The change of the live view header information is as follows.

Condition		Value of live view header information which changes after this command		
Face detecting	Tracking state	Tracking state	AF frame center coordinates	Index of detected face
There is a detected face at the specified coordinates	Waiting Selecting Tracking	Waiting	-	Index of faces existing at specified coordinates
There is not a detected face at the specified coordinates	Waiting Selecting Tracking	Tracking	Specified coordinates	-

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.

3.199.　　　PreCapture

This will take a picture for the presetting white balance.

Capability　　　kNkMAIDCapability_PreCapture

Object types　　Source

ulType　　　　　kNkMAIDCapType_Process

ulOperations　　kNkMAIDCapOperation_Start

Data   None

This capability is used for white balance for still image.

Where the white balance data will be saved is determined by the value of Capability_WBPresetNumber.

The following cases, the Visibility of this capability is invalid and the Operations are invalid.

- When the value of Capabilty_ShutterSpeed is "Time".
- When the value of Capabilty_LiveViewSelector is "1(Movie live view)".
- When the value of Capabilty_RetractableLensWarningStatus is "True".
- When the value of Capabilty_HDRMode is except "Off".

Result Codes

CaptureFailure	If the measuring white balance is failed.
NotSupported	・If you run the Operation that it is not supported against Capability. ・If the value of Capability_LockCamera is "False".
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	・Recording card is initializing. ・Capability_SaveMedia is "card" or "card and SDRAM" and then the recording card does not exist. ・When battery is low.
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.

3.200.   EffectMode

This will set the shooting menu Effect mode.

Capability   kNkMAIDCapability_EffectMode

Object types   Source

ulType   kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault,

kNkMAIDCapOperation_Set

Data   one of eNkMAIDEffectMode

0: Night vision

2: Miniature effect

3: Selective color

4: Silhouette

5: High key

6: Low key

7: Toy camera effect

9: Super vivid

10: Pop

<u>11: Photo Illustration</u>

This Capability is used when the value of kNkMAIDCapability_ExposureMode is set to "17:EFFECTS". The value obtained when it is not set to "17:EFFECTS" is not guaranteed.

The following cases, this Capability is read only.

- When the value of Capability_ExposureMode mode is other than "17:EFFECTS".
- When the value of Capability_SpotWBMode is 1(ON).
- During movie recording.

3.201. SceneMode

This will set the shooting menu Scene Mode.

Capability   kNkMAIDCapability_SceneMode

Object types   Source

ulType   kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault,

kNkMAIDCapOperation_Set

Data   one of eNkMAIDSceneMode

0: Night landscape

1: Party/indoor

2: Beach/snow

3: Sunset

4: Dusk/dawn

5: Pet portrait

6: Candlelight

7: Blossom

8: Autumn colors

9: Food

13: Portrait

14: Landscape

15: Child

16: Sports

17: Close up

18: Night portrait

This Capability is used when the value of kNkMAIDCapability_ExposureMode is set to "14 SCENE". The scene mode that can be set by Capability_ExposureMode and the scene mode that can be set in this Capability are the same "Scene mode", but the setting method is different depending on whether using the command dial or shooting mode dial.

The following cases, this Capability is read only.

- When the value of Capability_ExposureMode mode is other than "14:SCENE".
- When the value of Capability_SpotWBMode is 1(ON).
- During movie recording.

3.202.　　　InternalSplMode

This will set "Flash control – Flash control mode(built-in)" of Photo shooting menu.

Capability　　kNkMAIDCapability_InternalSplMode

Object types　Source

ulType　　　　kNkMAIDCapType_Enum

　　　　　　　　kNkMAIDArrayType_PackedString

ulOperations　kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

　　　　　　　　kNkMAIDCapOperation_Set

Data

TTL mode	"TTL"
Manual flash mode	"Manual"

The following cases, this Capability is read only.

- When the shooting mode is other than P,S,A,M.
- During movie file recording.
- When the value of Capability_SpotWBMode is 1(ON).

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

- When the value of Capability_ExternalFlashStatus is other than 2(Not Exist) and the value of Capability_ExternalFlashSort is 0(non- communication) or 2(new communication (with setting display)).
- When the value of Capability_ExternalFlashStatus is other than 2(Not Exist) and the wireless setting is other than OFF.

- When the clip-on SB is in LED mode.

3.203.   InternalFlashStatus

This will get the status of the built-in Speedlight.

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

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

3.204.   StillCaptureModeSaveFrame

This will set the value of "Release mode (save frame)" from the Movie shooting menu.

Capability	kNkMAIDCapability_StillCaptureModeSaveFrame
Object types	Source
ulType	kNkMAIDCapType_Enum
	kNkMAIDArrayType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
	kNkMAIDCapOperation_Set
Data	one of eNkMAIDStillCaptureModeSaveFrame
	<u>1: Single frame</u>
	2: Continous

The following cases, this Capability is read only.
- During movie recording.
- When the value of Capability_SpotWBMode is 1(ON).

3.205.   LiveViewImageCompression

This will set the image quality of the live view image acquired in Capability_GetLiveViewImage.

Capability	kNkMAIDCapability_LiveViewImageCompression
Object types	Source
ulType	kNkMAIDArrayType_Unsigned
	kNkMAIDCapType_Enum
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
	kNkMAIDCapOperation_Set
Data	one of eNkMAIDLiveViewImageCompression

0: BASIC

2: NORMAL

4: FINE

When the camera is connected and it's possible to set this Capability, the Module sets "4: FINE " 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. Standard Capabilities

4.1. AsyncRate

Capability   kNkMAIDCapability_AsyncRate
Object types   Module
ulType   kNkMAIDArrayType_Unsigned
ulOperations   kNkMAIDCapOperation_Get

4.2. ProgressProc

Capability   kNkMAIDCapability_ProgressProc
Object types   Source, Image, Thumbnail
ulType   kNkMAIDCapType_Callback
ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

4.3. EventProc

Capability   kNkMAIDCapability_EventProc
Object types   Module, Source, Item, Image, Thumbnail
ulType   kNkMAIDCapType_Callback
ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

4.4. DataProc

Capability   kNkMAIDCapability_DataProc
Object types   Image, Thumbnail
ulType   kNkMAIDCapType_Callback
ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

4.5. UIRequestProc

Capability   kNkMAIDCapability_UIRequestProc
Object types   Module
ulType   kNkMAIDCapType_Callback
ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

4.6. IsAlive

Capability   kNkMAIDCapability_IsAlive

Object types	Module, Source, Item, Image, Thumbnail,
ulType	kNkMAIDCapType_Boolean
ulOperations	kNkMAIDCapOperation_Get

4.7. Children

Capability	kNkMAIDCapability_Children
Object types	Module, Source
ulType	kNkMAIDCapType_Enum
	kNkMAIDArrayType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray

4.8. State

Capability	kNkMAIDCapability_State

  Not supported

4.9. Name

Capability	kNkMAIDCapability_Name
Object types	Module, Source, Item, Image, Thumbnail, Video
ulType	kNkMAIDCapType_String
ulOperations	kNkMAIDCapOperation_Get

  The image saved on SDRAM is taken a picture on the mode Capability_SaveMedia is
"1:SDRAM", the value of this capability about Item、Image、Thumbnail is "DSC_0000.xxx".
  The image saved on SDRAM is taken a picture on the mode Capability_SaveMedia is "2:Card +
SDRAM", the value of this capability about Item、Image、Thumbnail is "folder name¥filename.xxx".
However, when the image doesn't exist the on the card (For the reasons card was not inserted),
"DSC_0000.xxx" is used.

4.10. Description

Capability	kNkMAIDCapability_Description

  Not supported

4.11. Interface

Capability	kNkMAIDCapability_Interface
Object types	Source
ulType	kNkMAIDCapType_String
ulOperations	kNkMAIDCapOperation_Get

4.12. DataTypes

Capability   kNkMAIDCapability_DataTypes
Object types   Source, Item
ulType   kNkMAIDCapType_Unsigned
ulOperations   kNkMAIDCapOperation_Get

4.13. DateTime

Capability   kNkMAIDCapability_DateTime
Object types   Item
ulType   kNkMAIDCapType_DateTime
ulOperations   kNkMAIDCapOperation_Get

4.14. StoredBytes

Capability   kNkMAIDCapability_StoredBytes
Object types   Item, Image, Thumbnail
ulType   kNkMAIDCapType_Unsigned
ulOperations   kNkMAIDCapOperation_Get

4.15. Eject

Capability kNkMAIDCapability_Eject
  Not supported

4.16. Feed

Capability   kNkMAIDCapability_Feed
  Not supported

4.17. Capture

 This will take a picture and save the image to specified media.

Capability   kNkMAIDCapability_Capture

Object types   Source

ulType   kNkMAIDCapType_Process

ulOperations   kNkMAIDCapOperation_Start

 If you execute this Capability, the control is returned after the capture has completed.

 When Capability_ShootingMode is set to continuous shooting, refer to Capability_ShootingMode for the maximum number of shots possible.

 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.

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

　　　　・ When the value of Capabilty_ShutterSpeed is "Time".

　　　　・ When the value of Capabilty_RetractableLensWarningStatus is "True".

　　　　・ When the value of Capabilty_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.
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.

AperturaFEE	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.

4.18. Mode

Capability　　kNkMAIDCapability_Mode

　Not supported

4.19. Acquire

Capability　　　kNkMAIDCapability_Acquire
Object types　　Image, Thumbnail
ulType　　　　kNkMAIDCapType_Process
ulOperations　　kNkMAIDCapOperation_Start

4.20. Start

Capability　　kNkMAIDCapability_Start

　Not supported

4.21. Length

Capability　　kNkMAIDCapability_Length

　Not supported

4.22. SampleRate

Capability　　kNkMAIDCapability_SampleRate

　Not supported

4.23. Stereo

Capability　　kNkMAIDCapability_Stereo

　Not supported

4.24. Samples

Capability　　kNkMAIDCapability_Samples

　Not supported

4.25. Filter

Capability   kNkMAIDCapability_Filter

  Not supported

4.26. Prescan

Capability   kNkMAIDCapability_Prescan

  Not supported

4.27. AutoFocus

Capability   kNkMAIDCapability_AutoFocus

  Not supported

4.28. AutoFocusPt

Capability   kNkMAIDCapability_AutoFocusPt

  Not supported

4.29. Focus

Capability   kNkMAIDCapability_Focus

  Not supported

4.30. Coords

Capability   kNkMAIDCapability_Coords

  Not supported

4.31. Resolution

Capability   kNkMAIDCapability_Resolution

  Not supported

4.32. Preview

Capability   kNkMAIDCapability_Preview

  Not supported

4.33. Negative

Capability   kNkMAIDCapability_Negative

  Not supported

4.34. Bits

Capability   kNkMAIDCapability_Bits

Not supported

4.35. Planar

Capability   kNkMAIDCapability_Planar

Not supported

4.36. Lut

Capability   kNkMAIDCapability_Lut

  Not supported

4.37. Transparency

Capability   kNkMAIDCapability_Transparency

  Not supported

4.38. Threshold

Capability   kNkMAIDCapability_Threshold

  Not supported

4.39. Pixels

Capability   kNkMAIDCapability_Pixels
Object types   Image, Thumbnail
ulType   kNkMAIDCapType_Size
ulOperations   kNkMAIDCapOperation_Get

4.40. ForceScan

Capability   kNkMAIDCapability_ForceScan

  Not supported

4.41. ForcePrescan

Capability   kNkMAIDCapability_ForcePrescan

  Not supported

4.42. ForceAutoFocus

Capability   kNkMAIDCapability_ForceAutoFocus

  Not supported

4.43. NegativeDefault

Capability   kNkMAIDCapability_NegativeDefault

  Not supported

4.44. Firmware

Capability kNkMAIDCapability_Firmware

　Not supported

4.45. CommunicationLevel1

Capability kNkMAIDCapability_CommunicationLevel1

　Not supported

4.46. CommunicationLevel2

Capability kNkMAIDCapability_CommunicationLevel2

　Not supported

4.47. BatteryLevel

Capability kNkMAIDCapability_BatteryLevel
Object types Source
ulType kNkMAIDCapType_Integer
ulOperations kNkMAIDCapOperation_Get
Data 1, 5, 20, 35, 100 (%)

　This will show the remainingbattery percentage.

　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.

4.48. FreeBytes

Not supported

4.49. FreeItems

Not supported

4.50. Remove

Not supported

4.51. FlashMode

Capability	kNkMAIDCapability_FlashMode
Object types	Source
ulType	kNkMAIDCapType_Enum
	kNkMAIDArrayType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
	kNkMAIDCapOperation_Set,
Data	one of eNkMAIDFlashMode, eNkMAIDFlashModeDX2

<u>6: Fill flash</u>

7: Rear-curtain sync

8: Slow sync

9: Red-eye reduction

10: Slow sync + red-eye reduction

262: Flash Off

The table below shows the available flash modes as displayed in the camera menu, depending on the exposure mode, when using the internal flash.

Flash mode / ExposureMode Scene/EffectMode	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	Flash Off
S/M	Fill flash	-	Rear-curtain sync	Red-eye reduction	-	Flash Off
AUTO	Auto	-	-	Auto + red-eye reduction	-	Flash Off
Portrait / Close up / Child / Party/indoor / Pet portrait / Super vivid / Pop / Photo illustration / Toy camera effect	Auto	-	-	Auto + red-eye reduction	-	Flash Off

Landscape Sports Night landscape Beach/snow Sunset Dusk/dawn Candlelight Blossom Autumn colors Silhouette High key Low key Miniature	-	-	-	-	-	Flash Off
Night portrait	-	Auto slow sync	-	-	Auto slow sync + red-eye	Flash Off
Night vision Selective color	-	-	-	-	-	Flash Off
Food	Fill flash	-	-	-	-	-
U1/U2	Follow the shooting mode set for the user mode.					

Note: Below are the corresponding setting values for this Capability when a value containing "Auto" is displayed in the camera menu:

- "Auto": "6: Fill flash"
- "Auto slow sync": "8: Slow sync"
- "Auto + red-eye reduction": "9: Red-eye reduction"
- "Auto slow sync + red-eye": "10: Slow sync + red-eye reduction"

The table below shows the available flash modes as showed in the camera menu, depending on the exposure mode, when using an external flash.

Flash mode ExposureMode Scene/EffectMode	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
Portrait Close up Child Party/indoor Pet portrait Super vivid Pop Photo illustration Toy camera effect	Fill flash	-	-	Red-eye reduction	-	-
Landscape Sports Night landscape Beach/snow Sunset Dusk/dawn Candlelight Blossom Autumn colors Silhouette High key Low key Miniature	Fill flash	-	-	Red-eye reduction	-	-
Night portrait	-	Slow sync	-	-	Slow sync	-
Night vision Selective color	-	-	-	-	-	Flash Off
Food	Fill flash	-	-	-	-	-
U1/U2	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.

During an SB setting error, setting the value of this Capability is possible but the camera control value is Flash Off.

In the following cases, the value of this Capability is fixed to "262: flash off" and other values are not included in enumerated values. Further, this Capability becomes read only.

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

- When the value of Capability_HDRMode is other than 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 acquisition of image dust off data.

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.

4.52. ModuleType

Capability   kNkMAIDCapability_ModuleType
Object types   Module
ulType   kNkMAIDCapType_Unsigned
ulOperations   kNkMAIDCapOperation_Get

4.53. AcquireStreamStart

Capability   kNkMAIDCapability_AcquireStreamStart
  Not supported

4.54. AcquireStreamStop

Capability   kNkMAIDCapability_AcquireStreamStop
  Not supported

4.55. AcceptDiskAcquisition

Capability   kNkMAIDCapability_AcceptDiskAcquisition
Object types   Source
ulType   kNkMAIDCapType_Generic
ulOperations   kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

4.56. Version

Capability   kNkMAIDCapability_Version
Object types   Module
ulType   kNkMAIDCapType_Unsigned

ulOperations   kNkMAIDCapOperation_Get

4.57. FilmFormat

Capability   kNkMAIDCapability_FilmFormat
  Not supported

4.58. TotalBytes

Capability   kNkMAIDCapability_TotalBytes
  Not supported

5. Event

The client can't receive the event as follows while opening item object.

5.1. AddChild

This event will be issued when the child is added under an object.

Event   kNkMAIDEvent_AddChild

Object types   Module, Source, Item

data parameter Added child ID

When the added child is Item Object, Item ID will be set to the data parameter of call back function.

This event is issued only about the image preserved in SDRAM. The image preserved on the card is not issued.

5.2. RemoveChild

This event will be issued when the child is removed under an object.

Event   kNkMAIDEvent_RemoveChild

Object types   Module, Source, Item

data parameter Removed child ID

5.3. WarmingUp

Event   kNkMAIDEvent_WarmingUp

Not supported

5.4. WarmedUp

Event   kNkMAIDEvent_WarmedUp

Not supported

5.5. CapChange

This event will be issued when the information of Capability is changed.

Event   kNkMAIDEvent_CapChange

Object types   Module, Source, Item

data parameter Capability ID

In the following cases, this event will be issued.

- When the information of structure "NkMAIDCapInfo" of capability was changed.
- When the enum configuration of Capability with type of kNkMAIDCapType_Array has been changed

5.6.　OrphanedChildren

Event　　　　　kNkMAIDEvent_OrphanedChildren

　Not supported

5.7.　CapChangeValueOnly

　This event will be issued when the current value of capability is changed.

Event　　　　　kNkMAIDEvent_CapChangeValueOnly

Object types　　Module, Source, Item, Data

data parameter　Capability ID

　This event will be issued when only the current value of capability is changed (the array data, ulVisibility, ulOperations is not changed).

5.8.　CaptureComplete

　This will be issued when the acquisition or deletion of all images of which it takes a picture is completed.

Event　　　　　kNkMAIDEvent_CaptureComplete

Object types　　Source

data parameter　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.

5.9.　AddChildInCard

　This event will be issued when the child is added in card.

Event　　　　　kNkMAIDEvent_AddChildInCard

Object types　　Item

data parameter　Added child ID

　When the added child is Item Object, Item ID will be set to the data parameter of call back function.

　This event is issued only about the movie data preserved on the card. The still image data preserved on the card is not issued.

　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.

5.10. 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.

5.11. CapChangeOperationOnly

Operation value or visibility of Capability has changed.

Event   kNkMAIDEvent_CapChangeOperationOnly

Object types   Module, Source, Item, Data

dataparamater   Capability ID

Events to notify (the number of elements in the array, enumeration value configuration, value, etc. has not changed) if only Operation or visibility · Invalid attribute of Capability has changed.

5.12. 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.

5.13. 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 ").

5.14. 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. This event is not issued in case the starting of movie recording by Capability_MovRecInCardStatus.

6. Vendor Unique Results

6.1. ApertureFEE

The aperture is not set maximum F number.

Result	kNkMAIDResult_ApertureFEE
Command	Start
Capability	Capture, AFCapture, CaptureDustImage, CaptureAsync, AFCaptureAsync
Explanation	If the ExposureMode is set to Program or SpeedPriority and the aperture ring of the lens is not set to maximum F number, the camera cannot execute capture command.
Expected Action	The client displays the message to set the aperture to maximum F number and is waiting for next command.

6.2. BufferNotReady

This is not used in the current module.

6.3. NormalTTL

The speedlight is set TTL mode.

Result	kNkMAIDResult_NormalTTL
Command	Start
Capability	Capture, CaptureAsync
Explanation	The camera cannot take a picture when an external speedlight is attached and it is set TTL(measuring through the lens) mode.
Expected Action	The client displays the message that the camera cannot take a picture and is

waiting for next command.

6.4. MediaFull

There are neither free spaces that can be recorded on the card nor a free space that can be recorded with built-in the camera SDRAM.

Result   kNkMAIDResult_MediaFull

Command   Start

Capability   Capture, AFCapture, CaptureDustImage, CaptureAsync, AFCaptureAsync

Explanation   There is no free space at the specified media, so the client can not take a picture.

Expected Action The client displays the message that the camera cannot take a picture and is
                            waiting for next command.

6.5. InvalidMedia

It shows that the client can not take a picture because recording media is broken.

Result　　　　　kNkMAIDResult_InvalidMedia

Command　　　　Start

Capability　　　Capture, AFCapture, CaptureDustImage, CaptureAsync, AFCaptureAsync

Explanation　　　When Capability_SaveMedia is "Card" or "Card + SDRAM" it shows the client can
　　　　　　　　　not take a picture because the card is broken.

Expected Action The client displays the message that the camera cannot take a picture and is
　　　　　　　　　waiting for next command.

6.6. EraseFailure

This is not used in the current module.

6.7. CameraNotFound

The module did not find a camera on the bus.

Result　　　　　kNkMAIDResult_CameraNotFound

Command　　　　The commands need access to the camera. (most of the commands for the Source,
　　　　　　　　　the Item or the Data object.)

Explanation　　　The camera was disconnected. If the client sends Async command to the Module
　　　　　　　　　object at intervals, it can tell that the camera is reconnected by AddChild event.

Expected Action The client displays the message that the camera was disconnected and is waiting for
　　　　　　　　　next command.

6.8. BatteryDontWork

The main battery in the camera is used up.

Result　　　　　kNkMAIDResult_BatteryDontWork

Command　　　　Start

Capability　　　Capture, AFCapture, CaptureDustImage, CaptureAsync, AFCaptureAsync

Explanation　　　The camera cannot take a picture because of the battery.

Expected Action The client displays the message that the camera cannot take a picture and suggests
　　　　　　　　　changing battery.

6.9. ShutterBulb

The exposure time is set to Bulb.

Result   kNkMAIDResult_ShutterBulb

Command   Start

Capability   Capture, AFCapture, CaptureDustImage, CaptureAsync, AFCaptureAsync

Explanation   The camera cannot execute capture command if the Capability_ShutterSpeed is set
                    to bulb.

Expected Action The client displays the message that the camera cannot take a picture and is
                    waiting for next command.

6.10. OutOfFocus

Auto focus operation is failed.

Result   kNkMAIDResult_OutOfFocus

Command   Start

Capability   Capture, AFCapture, CaptureAsync, AFCaptureAsync

Explanation   When the Capability_FocusMode is AF-S(1) and auto focus operation is failed, the
                    camera cannot take a picture. Then this error is returned for the start of
                    Capability_Capture, Capability_AFCapture, Capability_CaptureAsync or
                    Capability_AFCaptureAsync.

Expected Action The client displays the message that the camera is out of focus and is waiting for
                    next command.

6.11. Protected

This is not used in the current module.

6.12. FileExists

This is not used in the current module.

6.13. SharingViolation

This is not used in the current module.

6.14. DataTransFailure

An error occurred while data transference.

Result	kNkMAIDResult_DataTransFailure
Command	Start, Async
Capability	Acquire
Explanation	If this error occurs while the client read an image from DRAM, it will lose the image.
Expected Action	The client aborts the data transference.

6.15. SessionFailure

The module cannot open source object because the camera cannot open more session.

Result	kNkMAIDResult_SessionFailure
Command	Open
Capability	-
Explanation	The camera can open 1 session. If the client tries to open more source object, the module returns this error.
Expected Action	The client displays an error message and is waiting for next command.

6.16. FileRemoved

This is not used in the current module.

6.17. BusReset

This command was aborted because bus-reset occurred.

Result	kNkMAIDResult_BusReset
Command	any command
Capability	any capability
Explanation	If bus-reset occurred, the command, which the module is executing, is aborted. Then the module returns this result for the command.
Expected Action	The client sends the command again.

6.18. NonCPULens

This is not used in the current module.

6.19. ReleaseButtonPressed

This is not used in the current module.

6.20. BatteryExhausted

This is not used in the current module.

6.21. CaptureFailure

The camera failed in setting the value for white balance preset data.

Result   kNkMAIDResult_CaptureFailure

Command   Start

Capability   PreCapture

Explanation   When it fails in white balance measurement(Capability_PreCapture), this error is returned.

Expected Action The client displays the message to confirm that the specified index of the preset is not protected and set again and is waiting for next command.

6.22. InvalidString

This is not used in the current module.

6.23. NotInitialized

This is not used in the current module.

6.24. CaptureDisable

This is not used in the current module.

6.25. DeviceBusy

A camera did not receive a command.

Result   kNkMAIDResult_DeviceBusy

Command   any command

Capability   any capability

Explanation   Since a camera is in the state where the command is not receivable, when it is not able to perform, this error returns.

Expected Action This command is sent again or a display of a user interface is returned to the state before command execution.

6.26. CaptureDustFailure

The camera failed in taking a dust off ref photo.

Result   kNkMAIDResult_CaptureDustFailure

Command   Start

Capability   CaptureDustImage

Explanation   When it fails in taking a dust off ref photo(Capability_CaptureDustImage), this error is returned.

Expected Action Do nothing.

6.27. ICADown

This is not used in the current module.

6.28. NotLiveView

Live view was automatically stopped by the factor of the camera. (Included the case of that the live view time limit passed.)

Result   kNkMAIDResult_NotLiveView

Command   Start, Set

Capability   GetLiveViewImage

Explanation   Wen live view was automatically stopped by the factor of the camera (Include the case of that the live view time limit passed.), this error is returned.

Expected Action The client displays an error message and is waiting for next command.

6.29. MFDriveEnd

The focus position reached the end of focus area in manual focus.

Result   kNkMAIDResult_MFDriveEnd

Command   Set

Capability   DeviceReady

Explanation   When the focus position reached the end of focus area by Capability_MFDrive, this error is returned.

Expected Action After kNkMAIDCapability_MFDrive run,

If the focus position reached the end of focus area, the module returns this error code about kNkMAIDCapability_DeviceReady .

6.30. UnformattedMedia

It shows that the client can not take a picture because the card is unformatted.

Result	kNkMAIDResult_UnformattedMedia
Command	Start
Capability	Capture, AFCapture, CaptureDustImage, CaptureAsync, AFCaptureAsync
Explanation	When Capability_SaveMedia is "Card" or "Card + SDRAM" it shows the client can not take a picture because the card is unformatted.
Expected Action	The client displays the message that the camera cannot take a picture and is waiting for next command.

6.31. MediaReadOnly

It shows that the client can not take a picture because the card is protected.

Result	kNkMAIDResult_MediaReadOnly
Command	Start
Capability	Capture, AFCapture, CaptureDustImage, CaptureAsync, AFCaptureAsync
Explanation	When Capability_SaveMedia is "Card" or "Card + SDRAM" it shows the client can not take a picture because the card is protected.
Expected Action	The client displays the message that the camera cannot take a picture and is waiting for next command.

6.32. DuringUpdate

This is not used in the current module.

6.33. BulbReleaseBusy

It shows during bulb exposure shooting.

Result	kNkMAIDResult_BulbReleaseBusy
Command	Start, Set
Capability	Capture, CaptureAsync
Explanation	It shows during bulb exposure shooting
Expected Action	If bulb exposure shooting started by Capability_Capture, Capability_CaptureAsync, kNkMAIDResult_BulbReleaseBusy will be returned until bulb exposure shooting is terminated.

6.34. SilentReleaseBusy

It shows during silent shooting.

Result	kNkMAIDResult_SilentReleaseBusy
Command	Start
Capability	DeviceReady

Explanation	It shows during silent shooting.
Expected Action	This result will be returned when the following all conditions will be met.

　　　　　　　　・Capability_LiveViewPhotoShootingMode is "1: ON"

　　　　　　　　・After performed Capability_AFCapture, Capability_AFCaptureAsync, Capability_Capture or Capability_CaptureAsync

　　　　　　　　・ Perform Capability_DeviceReady before the silent shooting is completed

6.35. MovieFrameReleaseBusy

This is not used in the current module.

6.36.　InvalidSBAttributeValue

This is not used in the current module.

6.37. Waiting_2ndRelease

This is not used in the current module.

6.38. MirrorUpCapture_Already_Start

This is not used in the current module.

6.39. RecInCard

It shows that the start of recording by card was successful.

Result	kNkMAIDResult_RecInCard
Command	Set
Capability	MovRecInCardStatus
Explanation	It shows that the start of recording by card was successful.
Expected Action	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.

6.40. RecInExternalDevice

It shows that the start of recording by external device was successful.

Result	kNkMAIDResult_RecInExternalDevice
Command	Set
Capability	MovRecInCardStatus
Explanation	It shows that the start of recording by external device was successful.
Expected Action	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.

6.41. RecInCardAndExternalDevice

It shows that the start of recording by both card and external device was successful.

Result	kNkMAIDResult_RecInCardAndExternalDevice
Command	Set
Capability	MovRecInCardStatus
Explanation	It shows that the start of recording by both card and external device was successful.
Expected Action	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.

6.42. SBSettingError

It shows that capture could not be performed due to an error in the SB settings.

Result	kNkMAIDResult_SBSettingError
Command	Start
Capability	Capture, AFCapture, CaptureDustImage, CaptureAsync, AFCaptureAsync
Explanation	When trying to perform a capture while using an external Speedlight in AA mode, the capture cannot be performed if the f-number is not determined.
Expected Action	Diplay a message to modify the flash settings, and wait for a command input by the user.

7. kNkMAIDDataObjType_Video

Capability for which data object type kNkMAIDDataObjType_Video can be used by this module applies to the content described in not the MAID3.1 rule but this document.

8. 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.

¥	^	`			~

9. 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	AINT8	Signed 8-bit integer array
0x4002	AUINT8	Unsigned 8-bit integer array
0x4003	AINT16	Signed 16-bit integer array
0x4004	AUINT16	Unsigned 16-bit integer array
0x4005	AINT32	Signed 32-bit integer array
0x4006	AUINT32	Unsigned 32-bit integer array
0x4007	AINT64	Signed 64-bit integer array
0x4008	AUINT64	Unsigned 64-bit integer array
0x4009	AINT128	Signed 128-bit integer array
0x400A	AUINT128	Unsigned 128-bit integer array
0xFFFF	STR	Variable length Unicode character string

10. 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	Photo LV	Movie LV	Movie rec.	Spot WB
3. Vendor Unique Capabilities				
ImageSize	○	×	×	×
CompressionLevel	○	×	×	×
WBMode	○	○	○	×

Capability	Photo LV	Movie LV	Movie rec.	Spot WB
Sensitivity	○	○	○	×
ResetMenuBank	○	○	×	×
WBTuneAuto	○	○	○	×
WBAutoType	○	○	○	×
WBTuneIncandescent	○	○	○	×
WBFluorescentType	○	○	○	×
WBTuneFluorescent	○	○	○	×
WBTuneSunny	○	○	○	×
WBTuneFlash	○	○	○	×
WBTuneShade	○	○	○	×
WBTuneCloudy	○	○	○	×
WBTuneColorTempEx	○	○	○	×
WBTuneColorAdjust	○	○	○	×
WBTuneNatural	○	○	○	×
WBTunePreset1	○	○	○	×
WBTunePreset2	○	○	○	×
WBTunePreset3	○	○	○	×
WBTunePreset4	○	○	○	×
WBTunePreset5	○	○	○	×
WBTunePreset6	○	○	○	×
WBPresetProtect1	○	○	×	×
WBPresetProtect2	○	○	×	×
WBPresetProtect3	○	○	×	×
WBPresetProtect4	○	○	×	×
WBPresetProtect5	○	○	×	×
WBPresetProtect6	○	○	×	×
WBPresetNumber	○	○	○	×
WBPresetName	○	○	×	×
CCDDataMode	○	○	×	×
ImageColorSpace	○	○	×	×
IsoControl	○	○	×	×
NoiseReduction	○	○	×	×
NoiseReductionHighISO	○	○	×	×
CompressRAWBitMode	○	○	×	×
PictureControl	○	○	×	×

Capability	Photo LV	Movie LV	Movie rec.	Spot WB
PictureControlDataEx2	○	○	×	×
DeleteCustomPictureControl	○	○	×	○
Active_D_Lighting	○	○	×	×
ISOAutoShutterTime	○	○	×	×
ISOAutoShutterTimeAutoValue	○	○	×	×
ISOAutoHiLimit	○	○	○	×
VignetteControl	○	○	×	×
MovieScreenSize	○	○	×	×
MovieImageQuality	○	○	×	×
MovieRecMicrophone	○	○	○	×
MovieRecMicrophoneValue	○	○	○	×
AutoDistortion	○	○	×	×
UserMode1	--	--	--	--
UserMode2	--	--	--	--
HDRMode	○	×	×	×
HDRExposure	○	×	×	×
HDRSmoothing	○	×	×	×
HDRSaveIndividualImages	○	×	×	×
FlashISOAutoHighLimit	○	○	×	×
AFAreaSelector	○	○	×	×
EVInterval	○	○	×	×
ShootingLimit	○	○	×	×
BracketingVary	○	○	×	×
BracketingOrder	○	○	×	×
ShootNoCard	○	○	×	×
UserComment	○	○	×	×
EnableComment	○	○	×	×
ClockDateTime	○	○	×	×
EnableCopyright	○	○	×	×
ArtistName	○	○	×	×
CopyrightInfo	○	○	×	×
ShutterSpeed	○	×	×	×
FlexibleProgram	○	×	×	×
Aperture	○	○	○	×
MeteringMode	○	○	×	×

Capability	Photo LV	Movie LV	Movie rec.	Spot WB
ExposureMode	○	○	×	○
ExposureComp	○	○	○	×
ShootingMode	○	○	×	○
ContinuousShootingNum	○	○	○	×
FocusAreaMode	○	○	×	×
EnableBracketing	○	×	×	×
AEBracketingStep	○	○	×	×
WBBracketingStep	○	○	×	×
BracketingType	○	○	×	×
ADLBracketingType	○	○	×	×
ADLBracketingStep	○	○	×	×
LiveViewStatus	○	○	○	○
LiveViewProhibit	--	--	--	--
CameraInclination	--	--	--	--
RemainContinuousShooting	--	--	--	--
RemainCountInMedia	--	--	--	--
LockExposure	--	--	--	--
LockFocus	--	--	--	--
LockFV	--	--	--	--
ExposureStatus	--	--	--	--
InfoDisplayErrStatus	--	--	--	--
FocalLength	--	--	--	--
FocusMode	--	--	--	--
BracketingCount	--	--	--	--
ExternalFlashStatus	--	--	--	--
ExternalFlashComp	--	--	--	--
ExternalFlashSort	--	--	--	--
ExternalNewTypeFlashMode	--	--	--	--
LensInfo	--	--	--	--
AFCapture	○	×	×	×
ContrastAF	○	○	○	○
MFDriveStep	○	○	○	○
MFDrive	○	○	○	○
ContrastAFArea	○	○	○	×
CaptureDustImage	○	○	×	×

Capability	Photo LV	Movie LV	Movie rec.	Spot WB
DeleteDramImage	○	○	×	○
RawJpegImageStatus	--	--	--	--
CurrentItemID	○	○	○	○
GetLiveViewImage	○	○	○	○
GetVideoImageEx	○	○	×	○
LockCamera	○	○	×	×
CameraType	--	--	--	--
LensType	--	--	--	--
AFModeAtLiveView	○	○	×	×
MovRecInCardStatus	×	○	○	×
MovRecInCardProhibit	--	--	--	--
AngleLevel	--	--	--	--
SaveMedia	○	○	×	×
TerminateCapture	○	○	×	○
BlinkingStatus	--	--	--	--
LiveViewSelector	○	○	×	×
ResetWBMode	○	○	×	×
MovieShutterSpeed	×	○	○	×
MovieAperture	×	○	○	×
MovieSensitivity	○	○	○	×
MovieExposureComp	×	○	○	×
MovieRecFrameCount	--	--	--	--
RetractableLensWarningStatus	--	--	--	--
MovieWindNoiseReduction	○	○	○	×
MovieRecordingZone	○	○	○	×
MovieISOControl	○	○	○	×
MovieISOAutoHiLimit	○	○	○	×
MoviePictureControlDataEx2	○	○	×	×
DeleteMovieCustomPictureControl	○	○	×	○
MovieWBMode	○	○	○	×
MovieWBTuneAuto	○	○	○	×
MovieWBAutoType	○	○	○	×
MovieWBTuneIncandescent	○	○	○	×
MovieWBFluorescentType	○	○	○	×
MovieWBTuneFluorescent	○	○	○	×

Capability	Photo LV	Movie LV	Movie rec.	Spot WB
MovieWBTuneSunny	○	○	○	×
MovieWBTuneShade	○	○	○	×
MovieWBTuneCloudy	○	○	○	×
MovieWBTuneColorTempEx	○	○	○	×
MovieWBTuneColorAdjust	○	○	○	×
MovieWBTuneNatural	○	○	○	×
MovieWBTunePreset1	○	○	○	×
MovieWBTunePreset2	○	○	○	×
MovieWBTunePreset3	○	○	○	×
MovieWBTunePreset4	○	○	○	×
MovieWBTunePreset5	○	○	○	×
MovieWBTunePreset6	○	○	○	×
MovieWBPresetProtect1	○	○	×	×
MovieWBPresetProtect2	○	○	×	×
MovieWBPresetProtect3	○	○	×	×
MovieWBPresetProtect4	○	○	×	×
MovieWBPresetProtect5	○	○	×	×
MovieWBPresetProtect6	○	○	×	×
MovieWBPresetName	○	○	×	×
MovieResetWBMode	○	○	×	×
MovieNoiseReductionHighISO	○	○	×	×
MoviePictureControl	○	○	×	×
ISOControlSensitivity	--	--	--	--
MovieMeteringMode	○	○	×	×
LiveViewImageSize	○	○	×	×
SpotWBMode	×	○	×	○
SpotWBMeasure	○	○	×	○
SpotWBChangeArea	○	○	×	○
SpotWBResultDispEnd	○	○	×	○
RawJpegTrasferStatus	○	○	○	○
CaptureAsync	○	○	○	×
AFCaptureAsync	○	○	○	×
DeviceReady	○	○	○	○
ElectronicVR	○	○	×	×
MovieActive_D_Lighting	○	○	×	×

Capability	Photo LV	Movie LV	Movie rec.	Spot WB
FlickerReductionSetting	○	○	×	×
SBIntegrationFlashReady	--	--	--	--
LiveViewPhotoShootingMode	○	○	×	×
HighlightBrightness	○	○	○	×
MovieAttenuator	○	○	○	×
SaveCameraSetting	○	○	×	○
MovieFileType	○	○	×	×
InternalFlashComp	○	×	×	×
GetRecordingInfo	--	--	--	--
DiffractionCompensation	○	○	×	×
VibrationReduction	○	○	×	×
MovieAutoDistortion	○	○	×	×
MovieAfAreaMode	○	○	○	×
MovieVibrationReduction	○	○	○	×
MovieFocusMode	○	○	○	×
MovieVignetteControl	○	○	×	×
MovieDiffractionCompensation	○	○	×	×
LiveViewImageStatus	--	--	--	--
LiveViewZoomArea	○	○	×	○
TrackingAFArea	○	○	○	×
PreCapture	○	○	×	×
EffectMode	○	○	×	×
SceneMode	○	○	×	×
InternalSplMode	○	○	×	×
InternalFlashStatus	--	--	--	--
StillCaptureModeSaveFrame	○	○	×	×
LiveViewImageCompression	○	○	×	×
4. Standard Capabilities				
AsyncRate	--	--	--	--
ProgressProc	○	○	○	○
EventProc	○	○	○	○
DataProc	○	○	○	○
UIRequestProc	○	○	○	○
IsAlive	--	--	--	--
Children	○	○	○	○

Capability	Photo LV	Movie LV	Movie rec.	Spot WB
State	--	--	--	--
Name	--	--	--	--
Description	--	--	--	--
Interface	--	--	--	--
DataTypes	--	--	--	--
DateTime	--	--	--	--
StoredBytes	--	--	--	--
Eject	--	--	--	--
Feed	--	--	--	--
Capture	○	○	○	✕
Mode	--	--	--	--
Acquire	○	○	○	○
Start	--	--	--	--
Length	--	--	--	--
SampleRate	--	--	--	--
Stereo	--	--	--	--
Samples	--	--	--	--
Filter	--	--	--	--
Prescan	--	--	--	--
AutoFocus	--	--	--	--
AutoFocusPt	--	--	--	--
Focus	--	--	--	--
Coords	--	--	--	--
Resolution	--	--	--	--
Preview	--	--	--	--
Negative	--	--	--	--
Bits	--	--	--	--
Planar	--	--	--	--
Lut	--	--	--	--
Transparency	--	--	--	--
Threshold	--	--	--	--
Pixels	--	--	--	--
ForceScan	--	--	--	--
ForcePrescan	--	--	--	--
ForceAutoFocus	--	--	--	--

Capability	Photo LV	Movie LV	Movie rec.	Spot WB
NegativeDefault	--	--	--	--
Firmware	--	--	--	--
CommunicationLevel1	--	--	--	--
CommunicationLevel2	--	--	--	--
BatteryLevel	--	--	--	--
FreeBytes	--	--	--	--
FreeItems	--	--	--	--
Remove	--	--	--	--
FlashMode	○	×	×	×
ModuleType	--	--	--	--
AcquireStreamStart	--	--	--	--
AcquireStreamStop	--	--	--	--
AcceptDiskAcquisition	--	--	--	--
Version	--	--	--	--
FilmFormat	--	--	--	--
TotalBytes	--	--	--	--

11. History

11.1. Rev.2.1 October 29, 2021

- Added of the following capabilities.
  - 3.205. LiveViewImageCompression
  - 10. Capability table that can be set during live view photography, movie live view, movie recording, SpotWB
- Changed Description in the following.
  - 3.112 GetLiveViewImage
  - 3.112.1 LiveView data format
  - 3.132 MovieWindNoiseReduction
  - 4.17 Capture
  - 10. Capability table that can be set during live view photography, movie live view, movie recording, SpotWB
- Deleted of the following capabilities.
  - MovieWBPresetNumber
  - 10. Capability table that can be set during live view photography, movie live view, movie recording, SpotWB

11.2. Rev.2.0 August 12, 2020

- Corrected Description in the following.
  - 3.112.1. [LiveView data format](#)

11.3. Rev.1.0 November 1, 2019   First version