Type0004 vendor unique capabilities

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Nikon Corporation

1. Introduction

This document explains the vendor unique capabilities, which are used by Type0004 module (Type0004.md3, Type0004 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

Type0004 module can control D7000 camera.

3. Vendor Unique Capabilities

The vendor unique capabilities that are used by Type0004 module are described as follows.

The under line shows default value.

- Scene Modes

  In this document, the exposure mode other than P, S, A, M, and the SCENE set by Capability_SceneMode are called “Scene Modes” in D7000.

  If the exposure mode is U1 or U2 and the value of Capability_UserMode1 or Capability_ UserMode2 is “Scene Modes”, that are also called “Scene Modes”.

3.1. ImageSize

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

Capability kNkMAIDCapability_ImageSize

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

L	L(4928*3264)
M	M(3696*2448)
S	S(2464*1632)

When Capability_CompressionLevel is "RAW", the ulVisibility of this capability is invalid and the ulOperations is set to read-only and the current value is invalid.

3.2. CompressionLevel

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

Capability kNkMAIDCapability_CompressionLevel

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data JPEG Basic,
JPEG Normal,
JPEG Fine,
RAW,
RAW + JPEG Basic,
RAW + JPEG Normal,
RAW + JPEG Fine

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

3.3. WBMode

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

Capability	kNkMAIDCapability_WBMode
Object types	Source
ulType	kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
Data	Auto, Incandescent, Fluorescent, Sunny, Flash, Shade, Cloudy, Preset1, Preset2, Preset3, Preset4, Preset5, Color Temperature

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.4. Sensitivity

This will select the sensitivity of camera (shooting menu)

Capability kNkMAIDCapability_Sensitivity

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data The value is affected by the setiing of Capability_CameraType, Capability_SensitivityInterval as bellows.

Capability_SensitivityInterval	
1/3 step	1/2 step
Auto 100, 125, 160, 200, 250, 320, 400, 500, 640, 800, 1000, 1250, 1600, 2000, 2500, 3200, 4000,5000, 6400, Hi-0.3, Hi-0.7, Hi-1.0, Hi-2.0	Auto 100, 140, 200, 280, 400, 560, 800, 1100, 1600, 2200, 3200, 4500, 6400, Hi-0.5, Hi-1.0, Hi-2.0

When Capability_ExposureMode is set to Program mode, Aperture priority, Speed priority, Manual, “Auto” cannot be selected.

3.5. ResetMenuBank

This will reset the custom settings, which is selected by Capability_MenuBank. (shooting menu)

Capability kNkMAIDCapability_ResetMenuBank

Object types Source

ulType kNkMAIDCapType_Process

ulOperations kNkMAIDCapOperation_Start

Data None

3.6. CompressRAWEx

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

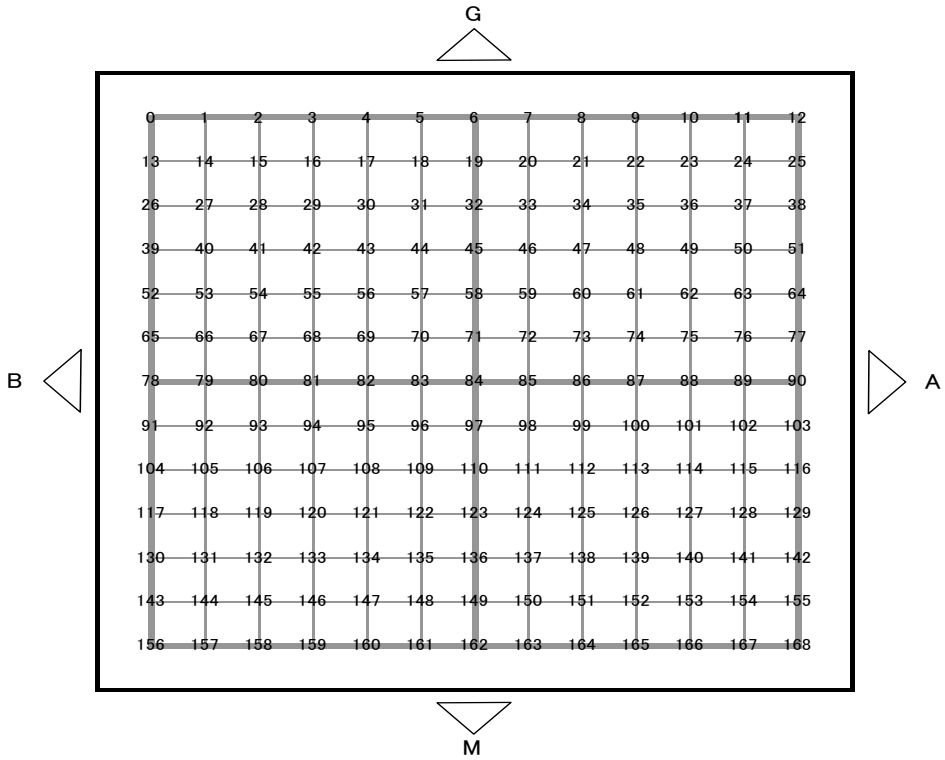
Capability	kNkMAIDCapability_CompressRAWEx
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
Data	one of eNkMAIDCompressRAWEx 1 : Compressed 2 : Lossless compressed

3.7. WBTuneAuto

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

Capability	kNkMAIDCapability_WBTuneAuto
Object types	Source
ulType	kNkMAIDCapType_Range
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set
Data	0 to 168 step=1 (Default: 84)

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



When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.8. WBAutoType

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

Capability	kNkMAIDCapability_WBAutoType
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
Data	one of eNkWBAutoType 0 : Standard 1 : Leave incandescent color

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.9. WBTuneIncandescent

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

Capability	kNkMAIDCapability_WBTuneIncandescent
Object types	Source
ulType	kNkMAIDCapType_Range
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set
Data	0 to 168 step=1 (Default: 84)

The relationship between while balance adjustment value and the coordinates is the same as the figure of Capability_WBTuneAuto.When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.10. WBFluorescentType

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

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

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.11. WBTuneFluorescent

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

Capability kNkMAIDCapability_WBTuneFluorescent

Object types Source

ulType kNkMAIDCapType_Range

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

Data 0 to 168 step=1 (Default: 84)

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

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.12. WBTuneSunny

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

Capability kNkMAIDCapability_WBTuneSunny

Object types Source

ulType kNkMAIDCapType_Range

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

Data 0 to 168 step=1 (Default: 84)

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

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.13. WBTuneFlash

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

Capability kNkMAIDCapability_WBTuneFlash

Object types Source

ulType kNkMAIDCapType_Range

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

Data 0 to 168 step=1 (Default: 84)

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

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.14. WBTuneShade

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

Capability kNkMAIDCapability_WBTuneShade

Object types Source

ulType kNkMAIDCapType_Range

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

Data 0 to 168 step=1 (Default: 84)

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

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.15. WBTuneCloudy

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

Capability kNkMAIDCapability_WBTuneCloudy

Object types Source

ulType kNkMAIDCapType_Range

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

Data 0 to 168 step=1 (Default: 84)

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

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.16. WBTuneColorTemp

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

Capability kNkMAIDCapability_WBTuneColorTemp

Object types Source

ulType kNkMAIDCapType_Enum

kNkMAIDArrayType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set

Data one of eNkMAIDWBTuneColorTemp (Default: 5000K)

Index	eNkMAIDWBTuneColorTemp	Index	eNkMAIDWBTuneColorTemp
0	2500	16	4170
1	2560	17	4350
2	2630	18	4550
3	2700	19	4760
4	2780	20	5000
5	2860	21	5260
6	2940	22	5560
7	3030	23	5880
8	3130	24	6250
9	3230	25	6670
10	3330	26	7140
11	3450	27	7690
12	3570	28	8330
13	3700	29	9090
14	3850	30	10000
15	4000		

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.17. WBTuneColorAdjust

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

(shooting menu)

Capability kNkMAIDCapability_WBTuneColorAdjust

Object types Source

ulType kNkMAIDCapType_Range

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

Data 0 to 168 step=1 (Default: 84)

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

If the value of color temperature is set under 2500K, or over 10000K by this capability and Capability_WBTuneColorTemp, the camera returns kNkMAIDResult_DeviceBusy.

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.18. WBTunePreset1

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

Capability kNkMAIDCapability_WBTunePreset1

Object types Source

ulType kNkMAIDCapType_Range

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

Data 0 to 168 step=1 (Default: 84)

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

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.19. WBTunePreset2

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

Capability kNkMAIDCapability_WBTunePreset2

Object types Source

ulType kNkMAIDCapType_Range

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

Data 0 to 168 step=1 (Default: 84)

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

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.20. WBTunePreset3

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

Capability kNkMAIDCapability_WBTunePreset3

Object types Source

ulType kNkMAIDCapType_Range

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

Data 0 to 168 step=1 (Default: 84)

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

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.21. WBTunePreset4

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

Capability kNkMAIDCapability_WBTunePreset4

Object types Source

ulType kNkMAIDCapType_Range

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

Data 0 to 168 step=1 (Default: 84)

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

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.22. WBTunePreset5

This will set the white balance adjustment when the WBMode is “Preset5”. (shooting menu)

Capability kNkMAIDCapability_WBTunePreset5

Object types Source

ulType kNkMAIDCapType_Range

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

Data 0 to 168 step=1 (Default: 84)

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

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.23. WBPresetNumber

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

Capability kNkMAIDCapability_WBPresetNumber

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data Preset 1, Preset 2, Preset 3, Preset 4, Preset 5

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.24. WBPresetName

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

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

When the client sends to the module kNkMAIDCapOperation_GetArray, the module set string array of the name of white balance preset data to “NkMAIDArray.pData” in order of preset1-5.

If the client set string longer than 36 bytes, the module uses 36 bytes from the head. The character, which can be included in the string, is only an ASCII 90 characters.(refer to the table in the ShootingBankName.) When the other character is set, the module returns an error(kNkMAIDResult_ValueOutOfBounds).

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

3.25. WBPresetData

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

Capability kNkMAIDCapability_WBPresetData

Object types Source

ulType kNkMAIDCapType_Generic

ulOperations kNkMAIDCapOperation_Set

Data pointer to NkMAIDWBPresetData structure

```
typedef struct tagNkMAIDWBPresetData
{
    ULONG   ulPresetNumber;------ preset number
    ULONG   ulPresetGain;----------- gain value
    ULONG   ulThumbnailSize;----- the thumbnail size set to "pThumbnailData"
    ULONG   ulThumbnailRotate;-- (This member is not used)
    void*   pThumbnailData;---------- the pointer to the thumbnail data to be set.
} NkMAIDWBPresetData, FAR* LPNkMAIDWBPresetData;
```

When the client sends kNkMAIDCapOperation_Set to the module, the client must to set all the member of "NkMAIDWBPresetData" structure without "ulThumbnailRotate".

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

The member "ulThumbnailSize" and "pThumbnailData" of "NkMAIDWBPresetData" structure is used only for kNkMAIDCapOperation_Set.

The red gain value is set to the upper 2 bytes, the blue gain value is set to the lower 2 bytes of "ulPresetGain". The both of red and blue gain value is expressed by the 8.8 format fixed-point number. (e.g. 1.5 → gain value:0x0180) The range of gain value is 0 ≤ gain value < 8 (0x0000 - 0x07FF).

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

- The image data is Jpeg.
- The size of image is 160 x 120.
- The quality of image is Fine(1/4 compressed).
- The size of image is below 13440 bytes.
- The image cannot include the tag except the following table.

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

3.26. WBGainRed

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

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

3.27. WBGainBlue

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

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

3.28. JpegCompressionPolicy

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

Capability	kNkMAIDCapability_JpegCompressionPolicy
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,
	kNkMAIDCapOperation_GetDefault
Data	one of eNkMAIDJpegCompressionPolicy
	0: Size priority
	1: Optimal quality

3.29. ImageColorSpace

This will set color space. (Shooting menu)

Capability	kNkMAIDCapability_ImageColorSpace
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
Data	one of eNkMAIDImageColorSpace 0 : sRGB, 1 : AdobeRGB

3.30. IsoControl

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

Capability	kNkMAIDCapability_IsoControl
Object types	Source
ulType	kNkMAIDCapType_Boolean
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
Data	True: used False: not used

When this capability value is set to True, ISO is controlled automatically by the camera in taking picture.

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.31. NoiseReduction

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

Capability	kNkMAIDCapability_NoiseReduction
Object types	Source
ulType	kNkMAIDCapType_Boolean
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
Data	True: used False: not used

3.32. NoiseReductionHighISO

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

Capability	kNkMAIDCapability_NoiseReductionHighISO
Object types	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)

3.33. Slot2ImageSaveMode

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

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

3.34. CompressRAWBitMode

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

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

3.35. PictureControl

This will select Picture Control. (Shooting menu)

Capability	kNkMAIDCapability_PictureControl
ulType	kNkMAIDCapType_Enum
	kNkMAIDArrayType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
	kNkMAIDCapOperation_Set
Data	one of eNkMAIDPictureControl
	0: Undefined Picture Control
	1: Standard
	2: Neutral
	3: Vivid
	4: Monochrome
	101 - 104 : Option Picture Control 1 - 4
	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 Option Picture Control and Custom Picture Control.

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

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

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

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.36. ChangedPictureControl

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

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

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

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

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

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

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

3.37. PictureControlData

This will get or edit or resist Picture Control data; (Shooting menu)

Capability	kNkMAIDCapability_PictureControlData
Object types	Source
ulType	kNkMAIDCapType_Generic
ulOperations	kNkMAIDCapOperation_Set, kNkMAIDCapOperation_Get kNkMAIDCapOperation_GetDefault
Data	pointer to NkMAIDPicCtrlData structure

```
typedef struct tagNkMAIDPicCtrlData
{
    ULONG   ulPicCtrlItem;------ The target Picture Control
    ULONG   ulSize;------------------The size of Picture Control data (Max: 609 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.

[In case of Set]

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

If "bModifiedFlag" is false (initial registration), the module updates the current value and default value of Picture Control, by the content of "pData". If "bModifiedFlag" is true (edit), the module updates the current value of Picture Control only, by the content of "pData".

The limitations at Set are as follows.

- If "ulPicCtrlItem" is Standard(1), Neutral(2), Vivid(3), Monochrome(4), Portrait(5), Landscape(6), Option Picture Control(101-104), bModifiedFlag must be set to true(edit).
- If "ulPicCtrlItem" is Custom Picture Control(201 - 209), the "CustomFlag" of Picture Control data must be set to custom (1).
- "RegistrationName" will not be used when "ulPicCtrlItem" is Standard(1), Neutral(2), Vivid(3), Monochrome(4), Portrait(5), Landscape(6).
- If "ulPicCtrlItem" is Neutral(2), Custom Picture Control(201 - 209), the "QuickAdjustFlag" of Picture Control data must be set to invalid (0).
- If "ulPicCtrlItem" is Monochrome(4), "MonochromeFlag" of Picture Control data must be set to monochrome (1). If "ulPicCtrlItem" is not Monochrome(4), "MonochromeFlag" of Picture Control data must be set to color(0).
- When "MonochromeFlag" is changed, bModifiedFlag must be set to false(initial registration).
- If the "QuickAdjustFlag" of Picture Control data is valid (1), the camera determines each setting by referring "QuickAdjust" of Picture Control data, and does not refer the other settings. If "QuickAdjustFlag" of Picture Control data is invalid (0), the camera determines each setting by referring the other settings, and does not refer "QuickAdjust" of Picture Control data.
- If "CustomCurveFlag" of picture control data is used (1), the client have to set Custom Picture Control(201 - 209) to "ulPicCtrlItem".

[In case of Get]

When the client sends kNkMAIDCapOperation_Get, the client must set the maximum Picture Control data size, 609, to "ulSize", and set the allocation space for 609 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.

[Color]

Field	Size (Byte)	Data
PicCtrlItem	1	type of Picture Control 1: Standatd 2: Neutral 3: Vivid 4: Monochrome 5: Portrait 6: Landscape 101 – 104 : Option Picture Control In case of Custom Picture Control, set the base Picture Control.
MonochromeFlag	1	Monochrome Flag 0: color 1: monochrome
CustomFlag	1	Custom Flag 0 : Standard 1 : Custom 2 : Unused custom
RegistrationName	20	Registration name of Picture Control The string data is 20 byte fixation, and null terminated. (19 characters in actual.)
QuickAdjustFlag	1	Quick Adjust Flag 0: invalid 1: valid In case of ulPicCtrlItem of NkMAIDPicCtrlData is Neutral or Custom Picture Control, it is 0 fixation.
QuickAdjust	1	Quick Adjust value -2 to +2
Saturation	1	Saturation -3 to +3 -128 is Auto
Hue	1	Hue -3 to +3
Sharpening	1	Sharpening 0 to 9 -128 is Auto

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

[Monochrome]

Field	Size (Byte)	Data
PicCtrlItem	1	type of Picture Control 1: Standard 2: Neutral 3: Vivid 4: Monochrome 5: Portrait (D90 only) 6: Landscape (D90 only) 101 – 104 : Option Picture Control In case of Custom Picture Control, set the base Picture Control.
MonochromeFlag	1	Monochrome Flag 0: color 1: monochrome
CustomFlag	1	Custom Flag 0 : Standard 1 : Custom 2 : Unused custom
RegistrationName	20	Registration name of Picture Control The string data is 20 byte fixation, and null terminated. (19 characters in actual.)
FilterEffects	1	Filter Effect 0: None 1: Yellow 2: Orange

		3: Red 4: Green
Toning	1	Toning(ToneColor) 0:B&W 1:Sepia 2:Cyanotype 3:Red 4:Yellow 5:Green 6:Blue Green 7:Blue 8:Purple Blue 9:Red Purple
ToningDensity	1	Toning(Level) 1 to 7
Reserve	1	vacant
Sharpening	1	Sharpening 0 to 9 -128 is Auto
Contrast	1	Contrast -3 to +3 -128 is Auto If CustomCurveData is used, this setting is not referred, and if kNkMAIDCapability_Active_D_Lighting is not set to [3. off], this setting is not used.
Brightness	1	Brightness -1 to +1 If CustomCurveData is used, this setting is not referred, and if kNkMAIDCapability_Active_D_Lighting is not set to [3. off], this setting is not used.
CustomCurveFlag	1	Custom Curve Flag 0 : No Custom Curve 1 : Custom Curve used
CustomCurveData	578	Custom Curve Data This data is not added when there is no Custom Curb. [Header] 64 byte + [LUT] 257x 2 byte = 578 byte Refer to "LUT format" for details. If kNkMAIDCapability_Active_D_Lighting is not [3. off], this setting is not used.

[LUT format]

LUT data is composed from LUT and LUT header. LUT is 514 byte 15 bit * 257 point, LUT header is 64 byte and is used by host. LUT header format is original specification by host, and the camera is not concerned of the content of LUT header. But, the top 2 byte of LUT header is used for camera to judge LUT header exist or not. So, the client have to set LUT header.

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

[LUT header format]

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

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

3.38. GetPicCtrlInfo

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

Capability	kNkMAIDCapability_GetPicCtrlInfo
Object types	Source
ulType	kNkMAIDCapType_Generic
ulOperations	kNkMAIDCapOperation_Get
Data	pointer to NkMAIDGetPicCtrlInfo structure

```
typedef struct tagNkMAIDGetPicCtrlInfo
{
    ULONG   ulPicCtrlItem;------The target Picture Control
    ULONG   ulSize;-----The size of Picture Control information (48bytes fixation)
    void*   pData;---------The pointer of Picture Control information.
} NkMAIDGetPicCtrlInfo, FAR* LPNkMAIDGetPicCtrlInfo;
```

the client must set the all the member of NkMAIDGetPicCtrlInfo.

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

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

The format of the Picture Control information is shown below.

[Picture Control information]

Offset	Size	Field	Data	Description	
0x00	1	ValidFlag	0 : invalid 1 : valid	It shows whether the data valid or invalid. When there is no base Picture Control or when it is monochrome, this value is 0.	
0x01	1	QuickCapa	0x80 : selectable 0x01 : AUTO usable 0x81 : selectable & AUTO usable	Quick Adjust setting.	
0x02	1	SharpenningCapa	0x80 : selectable 0x01 : AUTO usable 0x81 : selectable & AUTO usable	Sharpenning setting	
0x03	1	ContrastCapa	0x80 : selectable 0x01 : AUTO usable 0x81 : selectable & AUTO usable	Contrast setting	
0x04	1	BrightnessCapa	0x80 : selectable 0x01 : AUTO usable 0x81 : selectable & AUTO usable	Brightness setting	
0x05	1	SaturationCapa	0x80 : selectable 0x01 : AUTO usable 0x81 : selectable & AUTO usable	Saturation setting	
0x06	1	HueCapa	0x80 : selectable 0x01 : AUTO usable 0x81 : selectable & AUTO usable	Hue setting	
0x07	1	Reserved	0	Reserved	
0x08	1	DefaultQuickLevel	-2 to +2	Quick Adjust default value	
0x09	1	ContrastGridPos[0]	0 to 14	Contrast	Y coordinates in grid at value –3.
0x0A	1	ContrastGridPos[1]	0 to 14		Y coordinates in grid at value –2.
0x0B	1	ContrastGridPos[2]	0 to 14		Y coordinates in grid at value –1.
0x0C	1	ContrastGridPos[3]	0 to 14		Y coordinates in grid at value 0.
0x0D	1	ContrastGridPos[4]	0 to 14		Y coordinates in grid at value +1.
0x0E	1	ContrastGridPos[5]	0 to 14		Y coordinates in grid at value +2.
0x0F	1	ContrastGridPos[6]	0 to 14		Y coordinates in grid at value +3.
0x10	1	SaturationGridPos[0]	0 to 14	Saturation	X coordinates in grid at value –3.
0x11	1	SaturationGridPos[1]	0 to 14		X coordinates in grid at value –2.
0x12	1	SaturationGridPos[2]	0 to 14		X coordinates in grid at value –1.
0x13	1	SaturationGridPos[3]	0 to 14		X coordinates in grid at value 0.
0x14	1	SaturationGridPos[4]	0 to 14		X coordinates in grid at value +1.
0x15	1	SaturationGridPos[5]	0 to 14		X coordinates in grid at value +2.
0x16	1	SaturationGridPos[6]	0 to 14		X coordinates in grid at value +3.

0x17	1	DefaultLevel[0]	0 to 9	Quick Adjust -2	Sharpening
0x18	1		-3 to +3		Contrast
0x19	1		-1 to +1		Brightness
0x1A	1		-3 to +3		Saturation
0x1B	1		-3 to +3		Hue
0x1C	1	DefaultLevel[1]	0 to 9	Quick Adjust -1	Sharpening
0x1D	1		-3 to +3		Contrast
0x1E	1		-1 to +1		Brightness
0x1F	1		-3 to +3		Saturation
0x20	1		-3 to +3		Hue
0x21	1	DefaultLevel[2]	0 to 9	Quick Adjust 0	Sharpening
0x22	1		-3 to +3		Contrast
0x23	1		-1 to +1		Brightness
0x24	1		-3 to +3		Saturation
0x25	1		-3 to +3		Hue
0x26	1	DefaultLevel[3]	0 to 9	Quick Adjust 1	Sharpening
0x27	1		-3 to +3		Contrast
0x28	1		-1 to +1		Brightness
0x29	1		-3 to +3		Saturation
0x2A	1		-3 to +3		Hue
0x2B	1	DefaultLevel[4]	0 to 9	Quick Adjust 2	Sharpening
0x2C	1		-3 to +3		Contrast
0x2D	1		-1 to +1		Brightness
0x2E	1		-3 to +3		Saturation
0x2F	1		-3 to +3		Hue

3.39. DeleteCustomPictureControl

This will delete Custom Picture Control. (Shooting menu)

Capability kNkMAIDCapability_DeleteCustomPictureControl

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Set

Data Cutom 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.

3.40. Active_D_Lighting

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

Capability kNkMAIDCapability_Active_D_Lighting

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDActive_D_Lighting

0: High
1: Normal
2: Low
3: Off
5: Extra high
6: Auto

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.41. ISOAutoShutterTime

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

Capability kNkMAIDCapability_ISOAutoShutterTime
Object types Source
ulType kNkMAIDCapType_Unsigned
ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set
Data one of eNkMAIDISOAutoShutterTime

閾値	eNkMAIDISOAutoShutterTime
1/4000	20
1/3200	21
1/2500	22
1/2000	23
1/1600	24
1/1250	25
1/1000	26
1/800	27
1/640	28
1/500	29
1/400	30
1/320	31
1/250	13
1/200	14
1/160	15
1/125	0
1/100	16
1/80	17
1/60	1
1/50	19
1/40	18
1/30	2
1/15	3
1/8	4
1/4	5
1/2	6
1	7

When the Capability_IsoControl is True and the Capability_ExposureMode is “Program mode” or “ Aperture priority”, if it is under-expose with the shutter speed of this capability, ISO is controlled automatically to obtain optimum exposure.

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.42. ISOAutoHiLimit

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

Capability kNkMAIDCapability_ISOAutoHiLimit

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set

Data one of eNkMAIDISOAutoHiLimit

0: ISO200
1: ISO400
2: ISO800
3: ISO1600
4: ISO3200
5: ISO6400
6: Hi-1
7: Hi-2

When the Capability_ExposureMode is Scene Modes, or Capability_ISOControl is False, the ulOperations of this capability is set to read-only.

3.43. MovieScreenSize

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

Capability kNkMAIDCapability_MovieScreenSize

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set

Data one of eNkMAIDMovieScreenSize

eNkMAIDMovieScreenSize	Size	kNkMAIDCapability_VideoMode		Image quality
		NTSC	PAL	
3	640 × 424	30fps	25fps	Normal
4				High image quality
5	1280 × 720	24fps	24fps	Normal
6				High image quality
7		30fps	25fps	Normal
8				High image quality
9	1920 × 1080	24fps	24fps	Normal
10(Default)				High image quality

3.44. MovieRecMicrophone

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

Capability	kNkMAIDCapability_MovieRecMicrophone
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set
Data	one of eNkMAIDMovRecMicrophone 0: Microphone sensitivity Auto (A) 1: Microphone sensitivity High (3) 2: Microphone sensitivity Medium (2) 3: Microphone sensitivity Low (1) 4: Not recorded

3.45. MovieRecDestination

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

Capability	kNkMAIDCapability_MovieRecDestination
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set
Data	one of eNkMAIDMovRecDestination 0 :Slot 1 1 :Slot 2

When the Capability_MovRecInCardStatus is ON, the ulOperations of this capability is set to read-only.

If a card is not inserted in the slot that is set in this property, the movie is recorded on the card that is inserted in the other slot.

3.46. MovieManualSetting

This will set the shooting menu, [Movie setting – Manual setting of movie]. (Shooting menu)

Capability	kNkMAIDCapability_MovieManualSetting
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set
Data	one of eNkMAIDMovManualSetting 0 : OFF 1 : ON

When the value of this capability is set to ON(1), the changes of the following settings are reflected in Live View / Movie. But Capability_Aperture is not reflected in LiveView / Movie, it should be set before starting LiveView.

Capability_ShutterSpeed can be changed in the range from 1/8000 to 1/30.

3.47. AutoDistortion

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

Capability	kNkMAIDCapability_AutoDistortion
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set
Data	one of eNkMAIDAutoDistortion 0: Off 1: On

When the lens is not CPU, or does not support distortion control, the operations of this capability is set to read-only.

3.48. SceneMode

This will set the shooting menu, [Scene mode]. (Shooting menu)

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
10 : Silhouette
11 : High Key
12 : Low Key
13 : Portrait
14 : Landscape
15 : Child
16 : Sports
17 : Close up
18 : Night portrait

The value of this capability selects Scene Modes, when the mode dial is rotated to “SCENE”.
This capability supports set command only when the value of Capability_ExposureMode is set to [14: SCENE]. When the value of Capability_ExposureMode is set to the value other than [14: SCENE], the operations of this capability set to read-only.

3.49. UserMode1

This will get the shooting menu, [U1 (User mode1)]. (Shooting menu)

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 : Autumn 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 : Program mode
20 : Speed priority
21 : Aperture priority
22 : Manual
23 : Auto
24 : Flash Off

This capability supports get command only when the value of Capability_ExposureMode is set to [15: U1(User Mode1)]. When the value of Capability_ExposureMode is set to the value other than [15: U1(User Mode1)], the value is not secured.

Registration and reset of U1 can be done only from the main body of the camera.

3.50. UserMode2

This will get the shooting menu, [U2 (User mode2)]. (Shooting menu)

Capability	kNkMAIDCapability_UserMode2
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 : Autumn 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 : Program mode
20 : Speed priority
21 : Aperture priority
22 : Manual
23 : Auto
24 : Flash Off

This capability supports get command only when the value of Capability_ExposureMode is set to [16: U2(User Mode2)]. When the value of Capability_ExposureMode is set to the value other than [16: U2(User Mode2)], the value is not secured.

Registration and reset of U2 can be done only from the main body of the camera.

3.51. ResetCustomSetting

This will reset the custom settings, which is selected by Capability_CustomSettings.

(CSM menu R)

Capability kNkMAIDCapability_ResetCustomSetting

Object types Source

ulType kNkMAIDCapType_Process

ulOperations kNkMAIDCapOperation_Start

Data None

3.52. AFcPriority

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

Capability kNkMAIDCapability_AFcPriority

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

Focus	"AF-C Focus"
Release	"AF-C Shutter"

3.53. AFsPriority

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

Capability kNkMAIDCapability_AFsPriority

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

Focus	"AF-S Focus"
Release	"AF-S Shutter"

3.54. AFLockOnEx

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

Capability kNkMAIDCapability_AFLockOnEx

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDAFLockOnEx

0: Long (5)
1: Normal (3)
2: Short (1)
3: OFF
4: Long lightly (4)
5: Short lightly (2)

3.55. FocusAreaLED

This will set how focus points are illuminated in the viewfinder. (CSM menu a4)

Capability kNkMAIDCapability_FocusAreaLed

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set

Data Auto, Off, On

3.56. AFAreaSelector

This will set that AF area selector motion is circular or not. (CSM menu a5)

Capability kNkMAIDCapability_AFAreaSelector

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set

Data

No wrap	"Normal"
Wrap	"Cyclic"

3.57. AFAreaPoint

This will set AF point selection. (CSM menu a6)

Capability	kNkMAIDCapability_AFAreaPoint
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
Data	one of eNkMAIDAFAreaPoint 1: 11 points 2: 39 points

3.58. AFSubLight

This will set whether the built-in AF-assist illuminator lights or not. (CSM menu a7)

Capability	kNkMAIDCapability_AFSubLight
Object types	Source
ulType	kNkMAIDCapType_Boolean
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
Data	True: On False: Off

When the Capability_ExposureMode is Scene Modes(Landscape, Sports,Night Landscape, Beach/Snow, Sunset, Dusk/Dawn, Pet Portrait), the ulOperations of this capability is set to read-only.

3.59. AFModeAtLiveView

This will set the focus mode of the LiveView and the Movie. (CSM menu a8)

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 (fixed)(effective only as the Get value)

When the value of Capability_FocusMode is set to MF(0) and the LiveView is being performed, the ulOperations of this capability is set to read-only.

3.60. LiveViewAF

This will set the focus point in live view mode. (CSM menu a8)

Capability kNkMAIDCapability_LiveViewAF

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault, kNkMAIDCapOperation_Set

Data one of eNkMAIDLiveViewAF

0 : Face priority

1: Wide area

2: Normal area

3: Subject tracking

In the following table, the default value is changed by Scene modes.

When the setting of Capability_ExposureMode is changed to Scene Modes, the value of this capability will be changed to each default value.

Capability_ExposureMode Capability_SceneMode	Default value
Auto Flash Off Portrait(SCENE) Landscape(SCENE) Party/Indoor(SCENE) Beach/Snow(SCENE) Sunset(SCENE) Dusk/Dawn(SCENE) Candlelight(SCENE) Blossom(SCENE) Autumn Colors(SCENE) Night Portrait(SCENE) Child(SCENE)	0 : Face priority
Close Up(SCENE) Food(SCENE)	2 : Normal area
Sports(SCENE) Night Landscape(SCENE) Pet Portrait(SCENE) Silhouette(SCENE) High Key(SCENE) Low Key(SCENE)	1 : Wide area

It is possible to change the value of this capability.

When [3 : Subject tracking] is set while executing a live view, kNkMAIDResult_ValueOutOfBounds is returned.

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

When [3 : Subject tracking] is set when Capability_PictureControl is set to monochrome or monochrome base, kNkMAIDResult_ValueOutOfBounds is returned. And, when Capability_PictureControl is set to monochrome or monochrome base when [3 : Subject tracking] is set, the value of this capability is automatically changed to [1 : Wide area].

3.61. SensitivityInterval

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

Capability kNkMAIDCapability_SensitivityInterval

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

1/3 step	"1/3 Step"
1/2 step	"1/2 Step"

3.62. EVInterval

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

Capability kNkMAIDCapability_EVInterval

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

1/3 step	"1/3 Step"
1/2 step	"1/2 Step"

When this capability is changed and Capability_BracketingVary is set to AE bracketing, AE & Flash bracketing, Flash bracketing, Capability_AEBracketingStep will be set to 1/ EV (3), and Capability_EnableBracketing is set to OFF (False).

3.63. EasyExposureCompMode

This will set easy exposure compensation. (CSM menu　b3)

Capability kNkMAIDCapability_EasyExposureCompMode

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,
kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDEasyExposureCompMode
0: Off
1: On
2: On (Auto reset)

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.64. CWMeteringDiameter

This will select the center weighted metering diameter. (CSM menu b4)

Capability kNkMAIDCapability_CWMeteringDiameter

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

ϕ 6mm	"6 mm"
ϕ 8mm	"8 mm"
ϕ 10mm	"10 mm"
ϕ 13mm	"13 mm"
Average	"Average"

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.65. ExpBaseMatrix

This will set the exposure base when the metering mode is matrix. (CSM menu b5)

Capability kNkMAIDCapability_ExpBaseMatrix

Object types Source

ulType kNkMAIDCapType_Range

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

Data -1～+1EV (1/6 step) (Default : 0)

3.66. ExpBaseCenter

This will set the exposure base when the metering mode is center weighted. (CSM menu b5)

Capability kNkMAIDCapability_ExpBaseCenter

Object types Source

ulType kNkMAIDCapType_Range

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

Data -1～+1 EV (1/6 step) (Default : 0)

3.67. ExpBaseSpot

This will set the exposure base when the metering mode is spot. (CSM menu (CSM menu b5)

Capability kNkMAIDCapability_ExpBaseSpot

Object types Source

ulType kNkMAIDCapType_Range

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

Data -1～+1 EV (1/6 step) (Default : 0)

3.68. AELockonRelease

This will set to activate AE Lock or not when shutter button lightly pressed. (CSM menu c1)

Capability kNkMAIDCapability_AELockonRelease

Object types Source

ulType kNkMAIDCapType_Boolean

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,
kNkMAIDCapOperation_GetDefault

Data True: On False: Off

3.69. AutoOffDelay

This will set time delay for auto meter switch-off. (CSM menu c2)

Capability kNkMAIDCapability_AutoOffDelay

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

4sec.	“4 seconds”
6sec.	“6 seconds”
8sec.	“8 seconds”
16sec.	“16 seconds”
30sec.	”30 seconds”
1min.	“1 minute”
5min.	“5 minutes”
10min.	“10 minutes”
30min.	“30 minutes”
No limit	“Eternal”

This capability is not available when the camera works in PC mode.

3.70. SelfTimerDuration

This will set self-timer duration. (CSM menu　c3)

Capability kNkMAIDCapability_SelfTimerDuration

Object types Source

ulType kNkMAIDCapType_Enum

kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

kNkMAIDCapOperation_Set

Data

2sec.	“2 seconds”
5sec	“5 seconds”
10sec.	“10 seconds”
20sec.	“20 seconds”

This capability is not available when the camera works in PC mode.

3.71. SelfTimerShootNum

This will set the number of photographs taken in self-timer mode. (CSM menu c3)

Capability kNkMAIDCapability_SelfTimerShootNum

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,

kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDSelfTimerShootNum

0: 1

1: 2

2: 3

3: 4

4: 5

5: 6

6: 7

7: 8

8: 9

3.72. SelfTimerShootInterval

This will set the custom setting menu, [Timers/AE lock – Self-timer delay – Continuous release interval]. (CSM menu c3)

Capability kNkMAIDCapability_SelfTimerShootInterval

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

0.5sec.	“0.5 seconds”
1sec.	“1 seconds”
2sec.	“2 seconds”
3sec.	“3 seconds”

3.73. ImageConfirmTime

This will choose how long images are displayed in the monitor after shooting.(CSM menu c4)

Capability kNkMAIDCapability_ImageConfirmTime

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

4sec.	“4 seconds”
10sec.	“10 seconds”
20sec.	“20 seconds”
1min.	“1 minute”
5min.	“5 minutes”
10min.	“10 minutes”

3.74. AutoOffPhoto

This will choose how long images are displayed in the monitor on playback. (CSM menu c4)

Capability kNkMAIDCapability_AutoOffPhoto

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

4sec.	"4 seconds"
10sec.	"10 seconds"
20sec.	"20 seconds"
1min.	"1 minute"
5min.	"5 minutes"
10min.	"10 minutes"

3.75. AutoOffMenu

This will select the time of menu display. (CSM menu c4)

Capability kNkMAIDCapability_AutoOffMenu

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

4sec.	"4 seconds"
10sec.	"10 seconds"
20sec.	"20 seconds"
1min.	"1 minute"
5min.	"5 minutes"
10min/	"10 minutes"

3.76. AutoOffInfo

This will select the time of shooting info display. (CSM menu c4)

Capability kNkMAIDCapability_AutoOffInfo

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

4sec.	“4 seconds”
10sec.	“10 seconds”
20sec.	“20 seconds”
1min.	“1 minute”
5min.	“5 minutes”
10min.	“10 minutes”

3.77. AutoOffLiveView

This will select the time of live view display. (CSM menu c4)

Capability kNkMAIDCapability_AutoOffLiveView

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

5min.	“5 minutes”
10min.	“10 minutes”
15min.	“15 minutes”
20min.	“20 minutes”
30min.	“30 minutes”

3.78. RemoteCtrlWaitTime

This will set the wait time of remote control. (CSM menu c5)

Capability kNkMAIDCapability_RemoteCtrlWaitTime

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

1分	“1 minutes”
5分	“5 minutes”
10分	“10 minutes”
15分	“15 minutes”

3.79. BeepEx

This will set the pitch of the beep. (CSM menu d1)

Capability kNkMAIDCapability_BeepEx

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,
kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDBeepEx
0: High
1: Low

3.80. BeepVolume

This will set the volume of the beep. (CSM menu d1)

Capability kNkMAIDCapability_BeepVolume

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,
kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDBeepVolume
0: OFF
1: 1
2: 2
3: 3

3.81. FinderMode

This will set whether grid is display or not. (CSM menu d2)

Capability	kNkMAIDCapability_FinderMode
Object types	Source
ulType	kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetArray
Data	Grid Off, Grid On

3.82. FinderISODisplay

This will set the value of [Shooting/display – ISO display and adjustment] (CSM menu d3)

Capability	kNkMAIDCapability_FinderISODisplay
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
Data	one of eNkMAIDFinderISODisplay 0 : Show ISO sensitivity 1 : Show ISO/Easy ISO 2 : Off (Show frame count)

The relationship between this capability and Capability_EasyExposureCompMode is exclusion. So, when the value of Capability_EasyExposureCompMode is set to "On", the value of this capability will be changed to "Off (Show frame count)"

3.83. WarningDisp

This will set whether display or not warning icon in viewfinder. (CSM menu d4)

Capability	kNkMAIDCapability_WarningDisp
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
Data	one of eNkMAIDWarningDisp 0: On 1: Off

3.84. ScreenTips

This will set whether to display descriptions for items selected in the Quick settings display when they are selected. (CSM menu　d5)

Capability kNkMAIDCapability_ScreenTips

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDScreenTips

0: On

1: Off

3.85. ShootingSpeed

This will set the frame rate for continuous low-speed(CL). (CSM menu d6)

Capability kNkMAIDCapability_ShootingSpeed

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set

Data

5 fps	“5 frames / second”
4 fps	“4 frames / second”
3 fps	“3 frames / second”
2 fps	“2 frames / second”
1 fps	“1 frames / second”

3.86. ShootingLimit

This will set shooting limit number in continuous shooting.　(CSM menu　d7)

Capability kNkMAIDCapability_ShootingLimit

Object types Source

ulType kNkMAIDCapType_Range

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

Data 1 –100 (Default: 100)

The actual number of shot that can be taken in a continuous shooting mode is limited by the following capability, Capability_RemainContinuousShooting, Capability_Continuous ShootingNum, Capability_BracketingType. Please look at the paragraph of Capability_Con tinuousShootingNum for details.

3.87. NumberingMode

This will select a Numbering Mode. (CSM menu d8)

Capability kNkMAIDCapability_NumberingMode

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

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

3.88. ResetFileNumber

This resets the number of the file, which will be stored in CF/SD card. (CSM menu d8)

Capability kNkMAIDCapability_ResetFileNumber

Object types Source

ulType kNkMAIDCapType_Process

ulOperations kNkMAIDCapOperation_Start

Data None

3.89. InfoDispSetting

This will select whether to use automatically white letters when the subject is dark.

(CSM menu d9)

Capability kNkMAIDCapability_InfoDispSetting

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,
kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDInfoDispSetting
<u>0: Auto</u>
1: Manual (Dark on light)
2: Manual (Light on dark)

3.90. LCDBackLight

This will set whether to use LCD illuminator or not when the each button is pressed.

(CSM menu d10)

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

3.91. ExposureDelay

This will set exposure delay mode. (CSM menu d11)

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

3.92. RecommendFlashDisp

This will set the flash warning. (CSM menu d12)

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

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.93. CellKind

This will specify the type of AA size battery when using MB-D11 battery pack.(CSM menu d13)

Capability	kNkMAIDCapability_CellKind
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
Data	one of eNkMAIDCellKind <u>0: AA alkaline</u> 1: AA Ni-MH 2: AA lithium

3.94. CellKindPriority

This will select which battery are used first. (CSM menu d14)

Capability kNkMAIDCapability_CellKindPriority

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDCellKindPriority

0: Use MB-D11 batteries first

1: Use camera battery first

3.95. FlashSyncTime

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

Capability kNkMAIDCapability_FlashSyncTime

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set

Data

1/320sec（Auto FP）	“1/320 sec (FP Auto)”
1/250sec（Auto FP）	“1/250 sec (FP Auto)”
1/250sec	“1/250 sec”
1/200sec	“1/200 sec”
1/160sec	“1/160 sec”
1/125sec	“1/125 sec”
1/100sec	“1/100 sec”
1/80sec	“1/80 sec”
1/60sec	“1/60 sec”

3.96. FlashSlowLimit

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

Capability kNkMAIDCapability_FlashSlowLimit

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

1/60sec	“1/60 sec”
1/30sec	“1/30 sec”
1/15sec	“1/15 sec”
1/8sec	“1/8 sec”
1/4sec	“1/4 sec”
1/2sec	“1/2 sec”
1sec	“1 sec”
2sec	“2 sec”
4 sec	“4 sec”
8 sec	“8 sec”
15sec	“15 sec”
30sec	“30 sec”

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.97. InternalSplMode

This will set the flash mode for Built-in flash, or external speedlight is new communication. (without setting display: SB-400) (CSM menu e3)

Capability kNkMAIDCapability_InternalSplMode

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data “TTL”, “Manual” , “Command” , “Repeating Flash”

When powered external speedlight new communication, (without setting display: SB-400) is attached, the value of this capability is limited to 2 items, "TTL" and "Manual".

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.98. InternalSplValue

This will set the flash power when flash mode is Manual for Built-in flash or external speedlight new communication, (without setting display: SB-400)

(CSM menu e3)

Capability kNkMAIDCapability_InternalSplValue

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDInternalSplValue

eNkMAIDInternalSplValue	value	eNkMAIDInternalSplValue	value
0 (Default)	Full	15	1/13
8	1/1.3	4	1/16
9	1/1.7	16	1/20
1	1/2	17	1/25
10	1/2.5	5	1/32
11	1/3.2	18	1/40
2	1/4	19	1/50
12	1/5	6	1/64
13	1/6.4	20	1/80
3	1/8	21	1/100
14	1/10	7	1/128

This capability is used when Capability_InternalSplMode is "Manual"

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.99. InternalSplMRPTValue

This will set the flash power when Built-in flash mode is Repeating Flash. (CSM menu e3)

Capability kNkMAIDCapability_InternalSplMRPTValue

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDInternalSplMRPTValue

0: 1/4

1: 1/8

2: 1/16

3: 1/32

4: 1/64

5: 1/128

This capability is used when Capability_InternalSplMode is " Repeating Flash"

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.100. InternalSplMRPTCount

This will set the flash times when Built-in flash mode is Repeating Flash. (CSM menu e3)

Capability kNkMAIDCapability_InternalSplMRPTCount

Object types Source

ulType kNkMAIDCapType_Enum

kNkMAIDArrayType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray

kNkMAIDCapOperation_Set,

Data one of eNkMAIDInternalSplMRPTCount

eNkMAIDInternalSplMRPTCount	Times	eNkMAIDInternalSplMRPTCount	Times
0	2	7	9
1	3	8(Default)	10
2	4	9	15
3	5	10	20
4	6	11	25
5	7	12	30
6	8	13	35

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

The value of this capability is affected by the setting of Capability_InternalSplMRPTValue as the following table, but the contents of array data will not be changed.

Capability_InternalSplMRPTValue	Capability_InternalSplMRPTCount
0: 1/4	0
1: 1/8	0-3
2: 1/16	0-8
3: 1/32	0-9
4: 1/64	0-11
5: 1/128	0-13

3.101. InternalSplMRPTInterval

This will set the flash frequency when Built-in flash mode is Repeating Flash. (CSM menu e3)

Capability kNkMAIDCapability_InternalSplMRPTInterval

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDInternalSplMRPTInterval

eNkMAIDInternalSplMRPTInterval	Frequency	eNkMAIDInternalSplMRPTInterval	Frequency
0	1	7	8
1	2	8	9
2	3	9(Default)	10
3	4	10	20
4	5	11	30
5	6	12	40
6	7	13	50

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.102. InternalSplCommandChannel

This will set the channel when Built-in flash mode is Commander mode. (CSM menu e3)

Capability kNkMAIDCapability_InternalSplCommandChannel

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDInternalSplCommandChannel

0： 1 ch

1： 2 ch

2： 3 ch

3： 4 ch

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.103. InternalSplCmdSelfMode

This will set the Built-in flash mode when Built-in flash mode is Commander mode.

(CSM menu e3)

Capability kNkMAIDCapability_InternalSplCmdSelfMode

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set
kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDInternalSplCmdSelfMode
0: TTL
1: Manual
2: Off

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.104. InternalSplCmdSelfComp

This will set the Built-in flash compensation when Built-in flash mode is Commander mode and Capability_InternalSplCmdSelfMode is “TTL”. (CSM menu e3)

Capability kNkMAIDCapability_InternalSplCmdSelfComp

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,
kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDInternalSplCmdSelfComp

eNkMAIDInternalSplCmdSelfComp	Comp
0	−3.0
1	−2.7
2	−2.3
3	−2.0
4	−1.7
5	−1.3
6	−1.0
7	−0.7
8	−0.3
9(Default)	0
10	+0.3
11	+0.7
12	+1.0
13	+1.3
14	+1.7
15	+2.0
16	+2.3
17	+2.7
18	+3.0

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is

set to read-only.

This capability is used when Capability_InternalSplCmdSelfMode is "TTL".

3.105. InternalSplCmdSelfValue

This will set the Built-in flash compensation when Built-in flash mode is Commander mode and Capability_InternalSplCmdSelfMode is "Manual".(CSM menu e3)

Capability kNkMAIDCapability_InternalSplCmdSelfValue

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDInternalSplCmdSelfValue

eNkMAIDInternalSplCmdSelfValue	Comp.	eNkMAIDInternalSplCmdSelfValue	Comp.
0 (Default)	1/1	15	1/13
8	1/1.3	4	1/16
9	1/1.7	16	1/20
1	1/2	17	1/25
10	1/2.5	5	1/32
11	1/3.2	18	1/40
2	1/4	19	1/50
12	1/5	6	1/64
13	1/6.4	20	1/80
3	1/8	21	1/100
14	1/10	7	1/128

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

This capability is used when Capability_InternalSplCmdSelfMode is " Manual".

3.106. InternalSplCmdGroupAMode

This will set the flash mode of Group A when Built-in flash mode is Commander mode.

(CSM menu e3)

Capability kNkMAIDCapability_InternalSplCmdGroupAMode

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDInternalSplCmdGroupMode

0 : TTL

1 : AA

2 : Manual

3 : Off

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.107. InternalSplCmdGroupAComp

This will set the flash compensation of Group A when Built-in flash mode is Commander mode and Capability_InternalSplCmdGroupAMode is “TTL” or “AA”. （CSM menu　e3）

Capability kNkMAIDCapability_InternalSplCmdGroupAComp

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDInternalSplCmdGroupComp

eNkMAIDInternalSplCmdComp	Comp.	eNkMAIDInternalSplCmdComp	Comp.
0	−3.0	10	+0.3
1	−2.7	11	+0.7
2	−2.3	12	+1.0
3	−2.0	13	+1.3
4	−1.7	14	+1.7
5	−1.3	15	+2.0
6	−1.0	16	+2.3
7	−0.7	17	+2.7
8	−0.3	18	+3.0
9(Default)	0		

This capability is used when Capability_InternalSplCmdGroupAMode is ” TTL” or “AA”.

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.108. InternalSplCmdGroupAValue

This will set the flash power of Group A when Built-in flash mode is Commander mode and Capability_InternalSplCmdGroupAMode is “Manual”. (CSM menu e3)

Capability kNkMAIDCapability_InternalSplCmdGroupAValue

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDInternalSplCmdGroupValue

eNkMAIDInternalSplCmdGroupValue	Comp.	eNkMAIDInternalSplCmdGroupValue	Comp.
0 (Default)	1/1	15	1/13
8	1/1.3	4	1/16
9	1/1.7	16	1/20
1	1/2	17	1/25
10	1/2.5	5	1/32
11	1/3.2	18	1/40
2	1/4	19	1/50
12	1/5	6	1/64
13	1/6.4	20	1/80
3	1/8	21	1/100
14	1/10	7	1/128

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

This capability is used when Capability_InternalSplCmdGroupAMode is ”Manual”.

3.109. InternalSplCmdGroupBMode

This will set the flash mode of Group B when Built-in flash mode is Commander mode.

(CSM menu e3)

Capability kNkMAIDCapability_InternalSplCmdGroupBMode

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDInternalSplCmdGroupMode

0 : TTL

1 : AA

2 : Manual

3 : Off

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.110. InternalSplCmdGroupBComp

This will set the flash compensation of Group B when Built-in flash mode is Commander mode and Capability_InternalSplCmdGroupBMode is “TTL” or “AA”. （CSM menu e3 ）

Capability kNkMAIDCapability_InternalSplCmdGroupBComp

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDInternalSplCmdGroupComp

eNkMAIDInternalSplCmdComp	Comp.	eNkMAIDInternalSplCmdComp	Comp.
0	−3.0	10	+0.3
1	−2.7	11	+0.7
2	−2.3	12	+1.0
3	−2.0	13	+1.3
4	−1.7	14	+1.7
5	−1.3	15	+2.0
6	−1.0	16	+2.3
7	−0.7	17	+2.7
8	−0.3	18	+3.0
9(Default)	0		

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

This capability is used when Capability_InternalSplCmdGroupBMode ”TTL” or ”AA”.

3.111. InternalSplCmdGroupBValue

This will set the flash power of Group B when Built-in flash mode is Commander mode and Capability_InternalSplCmdGroupBMode is “Manual”. (CSM menu e3)

Capability kNkMAIDCapability_InternalSplCmdGroupBValue

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDInternalSplCmdGroupValue

eNkMAIDInternalSplCmdGroupValue	Comp.	eNkMAIDInternalSplCmdGroupValue	Comp.
0 (Default)	1/1	15	1/13
8	1/1.3	4	1/16
9	1/1.7	16	1/20
1	1/2	17	1/25
10	1/2.5	5	1/32
11	1/3.2	18	1/40
2	1/4	19	1/50
12	1/5	6	1/64
13	1/6.4	20	1/80
3	1/8	21	1/100
14	1/10	7	1/128

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

This capability is used when Capability_InternalSplCmdGroupBMode is ”Manual”.

3.112. ModelingOnPreviewButton

This will set whether modeling flash activates or not in case of preview button is pressed.

(CSM menu e4)

Capability kNkMAIDCapability_ModelingOnPreviewButton

Object types Source

ulType kNkMAIDCapType_Boolean

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault

Data True: On False: Off

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.113. BracketingVary

This will select the bracketing variation.(CSM menu e5)

Capability kNkMAIDCapability_BracketingVary

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

AE only	“AE Only”
Flash only	“Flash Only”
AE & flash	“AE & Flash”
WB bracketing	“White Balance”
ADL bracketing	“ADL bracketing”

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.114. BracketingOrder

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

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”

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.115. IlluminationSetting

This will set the function of the illuminator switch.(CSM menu f1)

Capability kNkMAIDCapability_IlluminationSetting

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,
kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDIlluminationSetting
0 : LCD backlight On/Off

1: LCD backlight and information display On/Off

3.116. CenterButtonOnShooting

This will set the function to the center button of the multi selector on shooting. (CSM menu f2)

Capability kNkMAIDCapability_CenterButtonOnShooting

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

Select center focus point	"Reset to Center"
Highlight active focus point	"Display Selected Area"
Not used	"Not used"

3.117. SelectFUNC

This will set the function be assigned to FUNC. button.(CSM menu f3)

Capability kNkMAIDCapability_SelectFUNC

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

Preview	"Preview"
FV lock	"FV Lock"
AE/AF lock	"AE Lock and AF Lock"
AE lock only	"AE Lock Only"
AE lock (Hold)	"AE Lock and Hold"
AF lock only	"AF Lock only"
Flash off	"Disable SB flash"
Bracketing burst	"Auto Stop of BKT"
Matrix metering	"Metering Matrix"
Center-weighted	"Metering Center Weighted"
Spot metering	"Metering Spot"
Virtual horizon	"Virtual horizon"
Access top item in My Menu	"Access top item in MY MENU"
+ NEF (RAW)	"+ NEF (RAW)"
Playback	"Playback"
Framing grid	"Framing grid"
Active D-Lighting	"Active D-Lighting"
1 step spd/aperture	"Choose Exposure Time and Aperture by 1 EV"
Choose non-CPU lens number	"Choose non-CPU lens number"
Start movie recording	"Start Movie Recording"

When the Capability_ExposureMode is Scene Modes, "Metering Matrix" and "Metering Center Weighted" and "Metering Spot" cannot be set.

3.118. PreviewButton

This will set the function of preview button.(CSM menu f4)

Capability kNkMAIDCapability_PreviewButton

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

Preview	"Preview"
FV lock	"FV Lock"
AE/AF lock	"AE Lock and AF Lock"
AE lock only	"AE Lock Only"
AE lock (Hold)	"AE Lock and Hold"
AF lock only	"AF Lock only"
Flash off	"Disable SB flash"
Bracketing burst	"Auto Stop of BKT"
Matrix metering	"Metering Matrix"
Center-weighted	"Metering Center Weighted"
Spot metering	"Metering Spot"
Virtual horizon	"Virtual horizon"
Access top item in My Menu	"Access top item in MY MENU"
+ NEF (RAW)	"+ NEF (RAW)"
Playback	"Playback"
Framing grid	"Framing grid"
Active D-Lighting	"Active D-Lighting"
1 step spd/aperture	"Choose Exposure Time and Aperture by 1 EV"
Choose non-CPU lens number	"Choose non-CPU lens number"
Start movie recording	"Start Movie Recording"

When the Capability_ExposureMode is Scene Modes, "Metering Matrix" and "Metering Center Weighted" and "Metering Spot" cannot be set.

3.119. AEAFLockButton

This will set the function of AE/AF lock button.(CSM menu f5)

Capability kNkMAIDCapability_AEAFLockButton

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

FV lock	"FV Lock"
AE/AF lock	"AE Lock and AF Lock"
AE lock only	"AE Lock Only"
AE lock (Hold)	"AE Lock and Hold"
AF lock only	"AF Lock only"
AF-ON	"AF-ON"

3.120. CommandDialDirection

This will set the direction of command dials.(CSM menu f6)

Capability kNkMAIDCapability_CommandDialDirection

Object types Source

ulType kNkMAIDCapType_Boolean

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,
kNkMAIDCapOperation_GetDefault

Data True: Normal False: Reverse

3.121. ExchangeDialsEx

This will exchange functions for main and sub command dials.(CSM menu f6)

Capability	kNkMAIDCapability_ExchangeDialsEx
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
Data	one of eNkMAIDExchangeDialsEx 0 : OFF 1 : ON 2 : ON (A mode)

3.122. ApertureDial

This will set whether to use sub-command dial to operate aperture.(CSM menu f6)

Capability	kNkMAIDCapability_ApertureDial
Object types	Source
ulType	kNkMAIDCapType_Boolean
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set kNkMAIDCapOperation_GetDefault
Data	True: use False: Not use

3.123. EnableCommandDialOnPlaybackEx

This will set whether the command dials is used or not during playback or when menus are displayed. (CSM menu f6)

Capability	kNkMAIDCapability_EnableCommandDialOnPlaybackEx
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
Data	one of eNkMAIDEnableCommandDialOnPlaybackEx 0: OFF 1: ON 2: ON（image review excluded）

3.124. UniversalMode

This will set the way of control on button.(CSM menu f7)

Capability	kNkMAIDCapability_UniversalMode
Object types	Source
ulType	kNkMAIDCapType_Boolean
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
Data	True: Universal Mode(Hold) False: Normal

3.125. ShootNoCard

This will set disable to shoot when a CF/SD card is not install.(CSM menu f8)

Capability	kNkMAIDCapability_ShootNoCard
Object types	Source
ulType	kNkMAIDCapType_Boolean
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set kNkMAIDCapOperation_GetDefault
Data	True: Enable to shoot False: Disable

3.126. IndicatorDisplay

This will set the direction of the plus and the minus to the indicator display. (CSM menu f9)

Capability	kNkMAIDCapability_IndicatorDisplay
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
Data	one of eNkMAIDIndicatorDisplay 0 : + 0 - 1 : - 0 +

3.127. VerticalAfButton

This will set the role played by the AF-ON button on the optional MB-D11 multi-power battery pack. (CSM menu f10)

Capability kNkMAIDCapability_VerticalAfButton

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

Menu	Data
AF-ON	"AF-ON"
AE-L/AF-L	"AE-L/AF-L"
AE-L	"AE Lock"
FV-L	"FV Lock"
AE-L（Hold）	"AE Lock and Hold"
AF-L	"AF-L"
Same as Fn button	"Same as Fn button"

3.128. VideoMode

This will set the Video mode.(SETUP)

Capability kNkMAIDCapability_VideoMode

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set,
kNkMAIDCapOperation_GetDefault

Data one of eNkMAIDVideoMode
0: NTSC
1: PAL

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

3.130. 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

3.131. CameraInclinationMode

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

Capability	kNkMAIDCapability_CameraInclinationMode
Object types	Source
ulType	kNkMAIDCapType_Boolean
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
Data	True: Add False: not Add

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

3.132. 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

3.133. ManualSetLensNo

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

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

3.134. FmmManual

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

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

3.135. F0Manual

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

Capability	kNkMAIDCapability_F0Manual
Object types	Source
ulType	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
Data	0(N/A), 12, 14, 18, …, 190, 220 (Default: 0)

This capability returns the aperture value multiplied by 10.

(e.g.: If aperture is F1.2 , the module returns 12, if aperture is F19, returns 190)

3.136. EnableCopyright

This will set whether attach copyright information. (SETUP)

Capability	kNkMAIDCapability_EnableCopyright
Object types	Source
ulType	kNkMAIDCapType_Boolean
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
Data	True: attach False: none

3.137. ArtistName

This will set the artist information. (SETUP)

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

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

for example.)

ABCD□EFG□□□□□□□□'¥0'

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

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

3.138. 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 90 characters. (refer to the table in the WBPresetName.) When the other character is set, the module returns an error(kNkMAIDResult_ValueOutOfBounds).

3.139. 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.) “Lo”, … ”1”, “1/1.3”, “1/1.6”, …”Hi” “x 1/250”, “x 1/200”,

When the Capability_ExposureMode is set to “Program” or “Aperture Priority” or Scene Modes, this capability is set to read-only.

When sequence error has occurred, the ulVisibility of this capability is set to invalid and ulOperations of this capability is set to read-only and the current value is invalid. If the ulOperations is changed, the module sends to the client kMAIDEvent_CapChange.

When the Capability_ExposureMode is set to “Program” or “Aperture Priority”, if the camera cannot set proper exposure time because a subject is too bright, the module points to “Hi”. Similarly, if a subject is too dark and the Capability_InternalFlashStatus is “Close” and Capability_ExternalFlashStatus is “Not Exist”, the module points to “Lo”.

When the Capability_InternalFlashStatus is “Close” and Capability_ExternalFlashStatus is “Not Exist”, the maximum shutter speed value is limited to the Capability_FlashSyncTime setting, The array data is changed.

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

3.140. FlexibleProgram

This will set the Flexible program value.

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

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

When the Capability_ExposureMode is not “Program” or sequence error has occurred, the ulVisibility of this capability is invalid and the ulOperations of this capability is set to read-only and the current value is invalid.

3.141. FocusPreferredArea

This will select the preferred focus area.

Capability kNkMAIDCapability_FocusPreferredArea

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

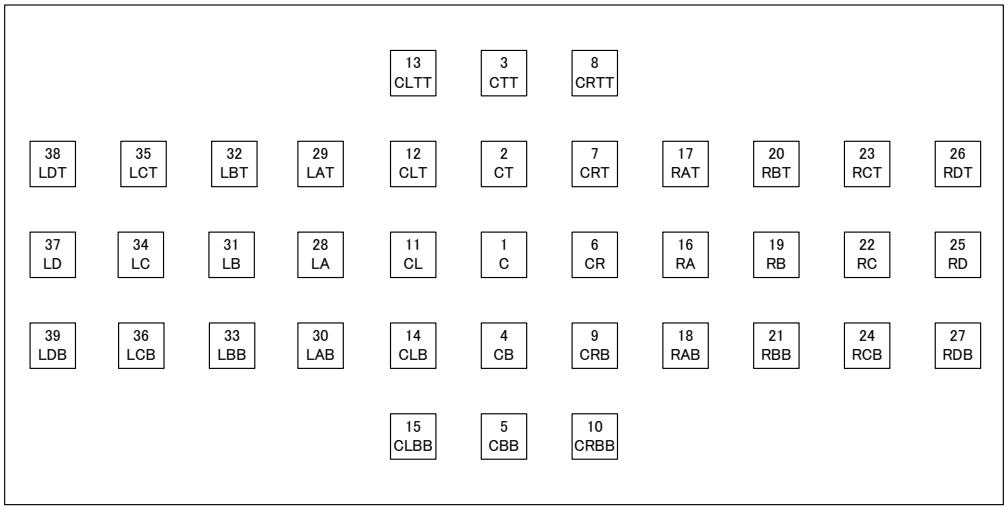
Data one of eNkMAIDFocusPreferred4
0 – 39 (default 1)

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

When 0 is set, the module returns an error(kNkMAIDResult_ValueOutOfBounds).

This capability is valid only when Capability_FocusAreaMode is "Single" or "Dynamic" or "3Dtracking".

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



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

AFAreaPoint	0 (39points)	1 (11points)
FocusPreferredArea	0 - 39	1, 3, 5, 19, 20, 21, 25, 31, 32, 33, 37

3.142. Aperture

This will set the aperture.

Capability	kNkMAIDCapability_Aperture
Object types	Source
ulType	kNkMAIDCapType_Enum kNkMAIDArrayType_PackedString
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
Data	String of F value (e.g.) “1.4”, “1.6”, “1.8”...

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

When CPU lens is not attatched, this capability returns aperture of the Capability_F0Manual setting. If the Capability_F0Manual is set to “N/A”, returns zero.

When the Capability_ExposureMode is set to “Program” or “Speed Priority” or Scene Modes, this capability is set to read-only.

When sequence error has occurred, the ulVisibility of this capability is set to invalid and ulOperations of this capability is set to read-only and the current value is invalid. If the ulOperations is changed, the module sends to the client kMAIDEvent_CapChange.

When the Capability_ExposureMode is set to “Speed Priority”, if the camera cannot set proper aperture value because a subject is too bright, the module points to “Hi”. Similarly, if a subject is too dark and the Capability_InternalFlashStatus is “Close” and Capability_ExternalFlashStatus is “Not Exist”, the module points to “Lo”.

3.143. 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

When Live view is executed, the change of this capability value is not applied, and the change is applied after Live view finished. When AE locked and Capability_ExposureMode is Scene Modes, the operations of this capability is set to read-only. When the CPU lens is not attached and Capability_ExposureMode is Program or Speed priority, the operations of this capability is set to read-only, the visibility is set to invalid.

When the CPU lens is not attached and Capability_ExposureMode is Program or Speed priority, the value of this capability is set to “Center weighted”.

If the Operations is changed, the module sends kMAIDEvent_CapChange to the client.

When the value of this capability is set to “Matrix” at the CPU lens is not attached and there is no lens information manual settings and Capability_ExposureMode is Manual or Aperture priority, it operates as “Center weighted”.

3.144. 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 eNkMAIDExposureMode2
	0: Program mode
	1: Aperture priority
	2: Speed priority
	3: Manual
	5: Auto
	13: Flash Off
	14: SCENE
	15: U1(User Mode1)
	16: U2(User Mode2)

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

When the array data is updated, the module sends kMAIDEvent_CapChange to the client.

This capability can be set when Capability_LockCamera is true.

The value, from 5 to 14 is called Scene Modes. If [14: SCENE] is set, the Scene Mode set by Capability_SceneMode will be used.

If [15: U1] or [16: U2] is set, the Exposure Mode set by Capability_UserMode1 or Capability_UserMode2 will be used.

3.145. 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. When the Capability_EVInterval is changed, the module sends to the client kMAIDEvent_CapChange.

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.146. ShootingMode

This will set the shooting mode.

Capability kNkMAIDCapability_ShootingMode

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data one of eNkMAIDShootingMode

0: SingleFrame
1: Continuous low speed
2: Continuous high speed
3: Self-timer
4: Mirror up
8: Quiet
9: Remote control

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

3.147. 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 – 100 (Default 1)

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

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

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

When the value of Capability_EnableBracketing is ON and execute bracketing on continuous mode, the client must set the value more than the bracketing number of shot to this capability.

But if the client sets the value more than the bracketing number of shot, bracketing will be stop at the setting the bracketing number of shot on continuous mode.

The actual number of shot on continuous mode will affect by the setting of Capability_SaveMedia.

Capability_SaveMedia	The actual number of shot on continuous mode
0 : Card	The minimum number among the below. ・The value of this capability ・Capability_ShootingLimit, ・Capability_RemainCountInMedia, ・The remain of Capability_BracketingType(while bracketing shooting)
1 : SDRAM	The minimum number among the below. ・The value of this capability、 ・Capability_ShootingLimit, ・Capability_RemainContinuousShooting, ・The remain of Capability_BracketingType(while bracketing shooting)
2 : Card + SDRAM	The minimum number among the below. ・The value of this capability、 ・Capability_ShootingLimit, ・Capability_RemainContinuousShooting, ・Capability_RemainCountInMedia, ・The remain of Capability_BracketingType(while bracketing shooting)

3.148. FocusAreaMode

This will select the AF area mode.

Capability kNkMAIDCapability_FocusAreaMode

Object types Source

ulType kNkMAIDCapType_Enum
kNkMAIDArrayType_PackedString

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
kNkMAIDCapOperation_Set

Data

Dynamic(9 points)	"Dynamic(9 points)"
Single	"Single"
Auto	"Auto"
3D-tracking	"3D-tracking "
Dynamic(21 points)	"Dynamic(21 points)"
Dynamic(39 points)	"Dynamic(39 points)"

In the following table, the default value is changed by Scene modes.
When the setting of Capability_ExposureMode is changed to Scene Modes, the value of this capability will be changed to each default value.

Capability_ExposureMode Capability_SceneMode	Default
Auto Portrait (SCENE) Landscape (SCENE) Night Portrait (SCENE) Night Landscape (SCENE) Flash Off Child (SCENE) Party/Indoor (SCENE) Beach/Snow SCENE) Sunset (SCENE) Dusk/Dawn (SCENE) Blossom (SCENE) Autumn Colors (SCENE)	Auto
Close up (SCENE) Candlelight (SCENE) Food (SCENE) Silhouette (SCENE) High Key (SCENE) Low Key (SCENE)	Single
Sports (SCENE) Pet Portrait (SCENE)	Dynamic(39 points)

When Capability_AFMode is AF-S(0), "3D-tracking" and "Dynamic(9/21/39 points)" cannot be set into. When the value of this capability is "3D-tracking" or "Dynamic(9/21/39 points)" and sets the value of Capability_AFMode to AF-S(0), The value of this capability is changed to "Single".

When the Capability_FocusMode is MF(0), or the CPU lens is not attached, the ulOperations is read-only.

3.149. EnableBracketing

This will set whether bracketing is active or not.

Capability kNkMAIDCapability_EnableBracketing

Object types Source

ulType kNkMAIDCapType_Boolean

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault

Data True: ON False: OFF

Capability_CompressionLevel is "RAW", "RAW+JPEG(Basic)" ,"RAW+JPEG(Normal)", "RAW+JPEG(Fine), the ulVisibility of this capability is set to invalid and ulOperations of this capability is set to read-only.

When Capability_BracketingVary does not set into WB bracketing or ADL bracketing, and the value of Capability_EVInterval is changed, the value of this capability is changed to False(OFF).

The ulOperations of this capability is changed, the module sends to the client kMAIDEvent_CapChange.

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.150. 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
3: 1EV
4: 1+1/3EV
5: 1+1/2EV
6: 1+2/3EV
7: 2EV

When the Capability_EnableBracketing is ON(true) and the Capability_BracketingVary is "AE Only", "Flash Only", "AE & Flash", this capability is valid. Other than the above, the ulVisibility of this capability is set to invalid and ulOperations of this capability is set to read-only.

The Capability_EVInterval setting as following table affects the array data.

If the ulVisibility and ulOperations are changed, the module sends to the client kMAIDEvent_CapChange.

EVInterval	AEBracketingStep
1/3EV	1/3EV、2/3EV、1EV、 1+1/3EV、1+2/3EV、2EV
1/2 EV	1/2EV、1EV、1+1/2EV、2EV

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

When the Capability_ExposureMode is DIP or Scene Modes, the ulOperations of this capability is set to read-only.

3.151. 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

When the Capability_EnableBracketing is ON(true) and the Capability_BracketingVary is “White Balance”, this capability is valid. Other than the above, the ulVisibility of this capability is set to invalid and ulOperations of this capability is set to read-only.

If the ulVisibility and ulOperations are changed, the module sends to the client kMAIDEvent_CapChange.

If the ulVisibility and ulOperations are changed, the module sends to the client kMAIDEvent_CapChange.

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.152. BracketingType

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

Capability	kNkMAIDCapability_BracketingType
Object types	Source
ulType	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
Data	one of eNkMAIDBracketingType 0: Minus_2 1: Plus_2 4: Both_3

This capability is valid when the value of Capability_EnableBracketing is ON(True), the exposure mode is not "Scene Modes" and the value of Capability_BracketingVary is not "ADL bracketing".

In the case other than the above, the ulVisibility of this capability is invalid and the ulOperations is read-only and the current value is invalid.

If the ulVisibility and ulOperations are changed, the module sends to the client kMAIDEvent_CapChange.

3.153. ADLBracketingType

This will select the bracketing shots when ADL bracketing.

Capability	kNkMAIDCapability_ADLBracketingType
Object types	Source
ulType	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
Data	one of eNkMAIDADLBracketingType 0：2 shots（Off – auto） 1：3 shots（Off – Normal– High）

This capability is valid when the value of Capability_EnableBracketing is ON(True), the exposure mode is not "Scene Modes" and the value of Capability_BracketingVary is "ADL bracketing".

In the case other than the above, the ulVisibility of this capability is invalid and the ulOperations is read-only and the current value is invalid.

If the ulVisibility and ulOperations are changed, the module sends to the client kMAIDEvent_CapChange.

3.154. 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 1: ON

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

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

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

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

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

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

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

3.155. LiveViewProhibit

This will show the status of Live view prohibition.

Capability kNkMAIDCapability_LiveViewProhibit

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get

Data one of eNkMAIDLiveViewProhibit

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

値	禁止条件
0x00008000	Capture command is executing. ■ Recording media is “Card” The while until receiving kNkMAIDEvent_CaptureComplete(data=0). ■ Recording media is “SDRAM” The while until receiving kNkMAIDEvent_CaptureComplete(data=1). ■ Recording media is “Card+SDRAM” The while until receiving kNkMAIDEvent_CaptureComplete (data=0) and kNkMAIDEvent_CaptureComplete (data=1).
0x00004000	Recording media is “Card” or “Card + SDRAM” and when no memory card is inserted in the camera, Release locked setting.
0x00002000	Release mode is mirror-up
0x00001000	There is image in camera SDRAM.
0x00000800	Non-CPU lens is attached, and ExposureMode is not Manual or Aperture priority
0x00000400	The setting by Aperture ring is valid.
0x00000200	TTL error
0x00000100	battery shortage
0x00000080	Mirror up
0x00000040	Shutter bulb
0x00000020	Aperture ring is not minimum.
0x00000010	All button pushed error.
0x00000004	Sequence error
0x00000001	Not used.

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

When the value of Capability_ApertureDial is True and the CPU lens with aperture ring is attached, “The setting by Aperture ring is valid.”(0x00000400) will be set.

When the CPU lens with aperture ring is attached and aperture ring is not minimum,

regardless of Capability_ApertureDial setting, “Aperture ring is not minimum.”(0x00000020) will be set.

When the value of Capability_BatteryLevel is 1, “battery shortage”(0x00000100) will be set.

3.156. LiveViewImageZoomRate

This will set the zoom rate for Live View image.

Capability	kNkMAIDCapability_LiveViewImageZoomRate
Object types	Source
ulType	kNkMAIDCapType_Enum kNkMAIDArrayType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray, kNkMAIDCapOperation_Set
Data	one of eNkMAIDLiveViewImageZoomRate 0: Whole display 1: 25 % 2: 33 % 3: 50 % 4: 66.7 % 5: 100 %

When the Live view is started, the value of this capability will be set to default value automatically.

This capability is valid when the value of Capability_LiveViewStatus is ON(1), Capability_MovRecInCardStatus is OFF(0), and when Capability_LiveViewStatus is not ON(1), Capability_MovRecInCardStatus is not OFF(0) the ulVisibility of this capability is set to read-only.

3.157. 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 : Level (included when the inclination cannot be detected) 1: Grip is top 2: Grip is bottom 3: Level (Up Down)

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

3.158. RemainCotinuousShooting

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 – 99 (Default: 99)

The value of this capability is always under the value of Capability_ShootingLimit.

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

- Capability_CompressionLevel
- Capability_ImageSize
- Capability_JpegCompressionPolicy
- Capability_CompressRAWEx
- Capability_CompressRAWBitMode
- Capability_Active_D_Lighting
- Capability_NoiseReduction
- Capability_NoiseReductionHighISO
- Capability_ShootingLimit
- Capability_SaveMedia

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

3.159. RemainCountInMedia

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

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

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

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

When Capability_Slot2ImageSaveMode is “0: Overflow” and Capability_ActiveSlot is “1: Slot1”, this capability returns the total number of slot1 and slot2. If the total number is over 65535, the upper limit is 65535.

When Capability_ActiveSlot is “2: Slot2”, the value of this capability returns the number of slot2 only.

3.160. LockExposure

This will get lock status of auto exposure.

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

3.161. LockFocus

This will get lock status of auto focus.

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

3.162. LockFV

This will get the status of FV lock.

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

3.163. ExposureStatus

This will get the exposure indicator status of Camera.

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

3.164. InfoDisplayErrStatus

This will show error display status on the information panel.

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

3.165. 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.

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

3.167. 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 – 3
	[ADL Bracketing] 1 – 3

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

3.168. USBSpeed

This will get USB transfer speed on current connected.

Capability	kNkMAIDCapability_USBSpeed
Object types	Source
ulType	kNkMAIDCapType_Enum
	kNkMAIDArrayType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,
Data	one of eNkMAIDUSBSpeed
	0: Full Speed 1: High Speed

3.169. InternalFlashStatus

This will show the status of Built-in flash.

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

3.170. InternalFlashComp

This will set the flash compensation of Built-in flash.

Capability kNkMAIDCapability_InternalFlashComp

Object types Source

ulType kNkMAIDCapType_Range

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

Data -3～+1 (Default:0)

The module sets the same step value as the value of Capability_ExpCompInterval.

When the Capability_InternalFlashStatus is “Close” and Capability_ExternalFlashStatus is “Not Exist”, this capability is set to read-only.

The flash compensation of Built-in flash is actually used when Capability_InternalFlashStatus is not “Close” and Capability_InternalSplMode is “TTL” or when Capability_ExternalFlashStatus is not “Not Exist” and Capability_ExternalNewTypeFlashMode is iTTL-BL(1), iTTL(2), AA(3).

When the Capability_ExposureMode is Scene Modes, the ulOperations of this capability is set to read-only.

3.171. ExternalFlashStatus

This will shows the status of External flash.

Capability kNkMAIDCapability_ExternalFlashStatus

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get

Data one of eNkMAIDExternalFlashStatus

0: Ready 1:Not Ready 2: Not Exist

3.172. ExternalFlashComp

This will set the flash compensation of the external speedlight.

Capability kNkMAIDCapability_ExternalFlashComp

Object types Source

ulType kNkMAIDCapType_Range

ulOperations kNkMAIDCapOperation_Get

Data -3～+3EV (1/6EV step)

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

3.173. ExternalFlashSort

This will get the sort of external speedlight.

Capability kNkMAIDCapability_ExternalFlashSort

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get

Data

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

The camera cannot detect "1: old communication.", so this capability returns always "0: non-communication.".

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

3.174. 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.

When the value of Capability_ExternalFlashSort is 4 (new communication (without setting display)), the value of this capability is changed by Capability_InternalSplMode setting.

3.175. 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”

In the case of D type, G type, E type and VR lens, "D", "G", "E" and "VR" are added to an end.

3.176. AFCapture

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

Capability kNkMAIDCapability_AFCapture

Object types Source

ulType kNkMAIDCapType_Process

ulOperations kNkMAIDCapOperation_Start

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

When auto focus failed, whether taking a picture or returning out of focus error, that is depends on the setting of Capability_FocusMode, Capability_AFsPriority, Capability_AFcPriority.

When continuous shooting mode is set, the number of shots set by the Capability_ ContinuousShootingNum is taken..

When Capability_LiveViewStatus is ON(1), the ulVisibility of this capability is invalid and the ulOperations is set to invalid.

When the module prepared to get a preview image, the module issues kNkMAIDEvent_AddPreviewImage. （However, if an image saved on card, the preview data is not generated.）

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

The media saved an image is specified by Capability_SaveMedia. When there is not free space in specified media, this capability returns kMAIDResult_MediaFull. And this capability returns kNkMAIDResult_NoMedia when card is formatted or no card is inserted.

3.177. ContrastAF

This will control contrast AF when Live view is executed on Tripod mode.

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 finish in focus (effective only as the Get value)

0x11 : AF finish 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 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.

This capability is valid when Capability_FocusMode isn't MF(0) and CPU lens is attached and also Capability_LiveViewStatus is ON(1).

3.178. PreCapture

This will take a picture for presetting white balance.

Capability kNkMAIDCapability_PreCapture

Object types Source

ulType kNkMAIDCapType_Process

ulOperations kNkMAIDCapOperation_Start

Data None

When Capability_LiveViewStatus is ON(1), the ulVisibility and ulOperations of this capability is set to invalid.

3.179. MFDriveStep

This will set the driving step of lens for adjusting focus position when Live view is executed on Tripod mode.

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.

This capability is valid when Capability_FocusMode isn't MF(0) and CPU lens is attached and also Capability_LiveViewStatus is ON(1).

3.180. MFDrive

This will adjust focus position when live view executed on Tripod mode.

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

This will send request to adjust focus position with the setting of this capability and the step of Capability_MFDriveStep.

The module will return response as soon as the camera starts adjusting manual focus position, the module doesn't wait to finish manual focus driving. If manual focus driving reaches the end of focus area, the module will return kNkMAIDResult_MFDriveEnd.

After this capability is executed correctly, the client can confirm whether manual focu s driving finish correctly by getting value of this capability, or referring "focus drive stat e" of "Display information" in Live view image. (please refer NkMAIDCapability_GetLive ViewImage)

This capability is valid when Capability_FocusMode isn't MF(0) and CPU lens is attached and also Capability_LiveViewStatus is ON(1).

3.181. ContrastAFArea

This will change focus point of contrast AF when Live view is executed on Tripod mode.

Capability kNkMAIDCapability_ContrastAFArea

Object types Source

ulType kNkMAIDCapType_Point

ulOperations kNkMAIDCapOperation_Set

Data struct NkMAIDPoint

```
{
    SLONG x; -----Coordinates of X axis
    SLONG y; -----Coordinates of Y axis
}
```

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

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

But the range that can be actually set becomes an area where "size of the AF frame" length and breadth size half was subtracted from the length and breadth size of "total size" respectively.

When the value that exceeds the range that can be set to x and y is set, the maximum or minimum value will be used as this value.

This capability is valid when Capability_LiveViewStatus is ON(1).

3.182. 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 lens is not attached or the Capability_ShootingMode is Mirror up or Capability_LiveViewStatus is ON(1), the ulVisibility and ulOperations of this capability is invalid.

About dust off ref photo, there is no preview image, so kNkMAIDEvent_AddPreviewImage is not issued.

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_CurrentPreviewID.

The media saved an image is specified by Capability_SaveMedia. When there is not free space in specified media, this capability returns kMAIDResult_MediaFull. And this capability returns kNkMAIDResult_NoMedia when card is formatted or no card is inserted.

3.183. DeleteDramImage

This will delete DRAM image specified by Capability_CurrentPreviewID.

Capability kNkMAIDCapability_DeleteDramImage

Object types Source

ulType kNkMAIDCapType_Process

ulOperations kNkMAIDCapOperation_Start

The DRAM image to be deleted is specified by Capability_CurrentPreviewID.

This capability execution timing is limited to the following 2 cases.

1. Before receiving kNkMAIDEvent_AddChild
2. After issuing kNkMAIDCapability_Acquire for Image Object, and before issuing kNkMAIDCommand_Close

In case of 1, the client set Capability_CurrentPreviewID and execute this capability, the deletion will be completed.

In of 2, the client will issue Capability_Acquire for Image object and cancel Capability_Acquire by kNkMAIDCommand_Abort, and set Capability_CurrentPreviewID and execute this capability, so, the deletion will be completed.

In case of RAW+JPEG, kNkMAIDEvent_AddPreviewImage is issued only for JPEG image. that is not issued for RAW image.

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.

About dust off ref photo and RAW file of RAW+JPEG, there is no preview image, so kNkMAIDEvent_AddPreviewImage is not issued. But the client can delete the DRAM image by using Item ID notified by data parameter of kNkMAIDEvent_AddChild.

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 Crad.

[D3S] To Delete SDRAM image by this capability is prohibited, when it is applied for either of condition below. In this case, this capability returns kNkMAIDResult_NotSupported.

- The value of Capability_SaveMedia is “2 : Card + SDRAM”.
- The value of Capability_SaveMedia is “2 : Card + SDRAM”, and it has not completed to read all SDRAM image, after Capability_Capture or Capability_AFCapture or Capability_CaptureDustImage is executed.

3.184. RawJpegImageStatus

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

Capability kNkMAIDCapability_RawJpegImageStatus

Object types Image

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get

Data one of eNkMAIDRawJpegImageStatus

0 : Single 1: Raw+JPEG

3.185. CurrentPreviewID

This will specify the DRAM image operated now.

Capability kNkMAIDCapability_CurrentPreviewID

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

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

Preview ID is notified by data parameter of kNkMAIDEvent_AddChild.

In case of image data to which kNkMAIDEvent_AddPreviewImage is not issued, RAW of RAW+JPEG and dust off ref photo, the client uses Item ID notified by data parameter of kNkMAIDEvent_AddChild as Preview ID.

The value of this capability is referred by Capability_DeleteDramImage.

3.186. GetLiveViewImage

This will get Live view image.

Capability kNkMAIDCapability_GetLiveViewImage

Object types Source

ulType kNkMAIDCapType_Array
kNkMAIDArrayType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray

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

Every time, the size of Live view image need not be confirmed with kNkMAIDCapOperation_Get in this capability before execution of kNkMAIDCapOperation_GetArray because the specification of Live view image is always fixation.

When the client want 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 preview image, kNkMAIDArray.ulElements will be updated with the actual size of Live view image I, the Live view image will be set to kNkMAIDArray.pData.

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

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

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

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

Specification of Live view image

image quality	maximum file size
Jpeg Basic	384byte / Display information ＋ 900Kbyte/Max Live view image

The format of the Live view image is shown below.

Display information	Attached JPEG image size	Horizontal size	2 Byte	When the image is enlarged: 640x480 When the image is not enlarged: 640x480 or smaller
		Vertical size	2 Byte	
	Whole size	Horizontal size	2 Byte	Standard of the coordinates
		Vertical size	2 Byte	
	Display area size	Horizontal size	2 Byte	The whole size is equal to the display area size when the image is not enlarged.
		Vertical size	2 Byte	
	Display center coordinates	Horizontal position	2 Byte	
		Vertical position	2 Byte	
	AF frame size	Horizontal size	2 Byte	
		Vertical size	2 Byte	
	AF frame center coordinates (*1)	Horizontal position	2 Byte	
		Vertical position	2 Byte	
	Reserve		4 Byte	
	Selected focus area		1 Byte	From 0 to 39
	Rotation direction		1 Byte	0: No rotation 1: Rotate counterclockwise 2: Rotate clockwise
	Focus driving status		1 Byte	0: Not driving, 1: Driving
	Reserve		1 Byte	
	Reserve		4 Byte	
	Reserve		2 Byte	
	Countdown time		2 Byte	Countdown every one second starting from 3600 (one hour) ; countdown starting from thirty seconds with a rise in temperature
	Focusing judgement result		1 Byte	0: No information, 1: Not focused, 2: Focused
	AF driving enabled status		1 Byte	0: AF driving disabled, 1: AF driving enabled
	Reserve		2 Byte	
	Level angle information (*3)	Rolling	4 Byte	
		Pitching	4 Byte	

			Yawing	4 Byte	
	Remaining time of movie recording			4 Byte	From 0 to 1200000 [msec] * It is valid during the movie recording state.
	Movie recording information			1 Byte	0: During LV execution 1: During movie recording
	AF mode status of the face detection system			1 Byte	0: The face detection system is not set to AF. 1: The face detection system is set to AF.
	The number of persons whose faces are detected by the system			1 Byte	From 0 to 35 (Thirty-five is the maximum number of persons for D7000.)
	AF area index			1 Byte	From 0 to 34 (fixed to 0 for D7000)
	0 to 34	AF frame size	Horizontal size	2 Byte	Area of the AF frame size and the AF frame center coordinates for thirty-five persons (4 Byte + 4 Byte) x 35 persons; 280 Byte in total
			Vertical size	2 Byte	
		AF frame center coordinates	Horizontal position	2 Byte	
			Vertical position	2 Byte	
	Reserve			40 Byte	
Live view image	Image data				

(*)Virtual horizon angle information

- The data type is signed 32 bit, and the fixed decimal mode. The integer is set at upper 16 bit, the decimal is set at lower 16 bit. (Refer to Capability_AngleLevel for details.)
- The value becomes –1(0xFFFFFFFF) when angle information cannot be acquired or there is no reliability in the angle.

3.187. GetVideoImage

This will get Movie image.

Capability kNkMAIDCapability_GetVideoImage

Object types Video

ulType kNkMAIDCapType_Generic

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray

Data pointer to NkMAIDGetVideoImage structure

```
typedef struct tagNkMAIDGetVideoImage
{
    ULONG   ulType;------one of eNkMAIDArrayType
    ULONG   ulOffset;-----Offset position that begins data acquisition
    ULONG   ulReadSize;-----Size of acquired data
    ULONG   ulDataSize;-----Size of buffer set to "pData"
    LPVOID   pData;---------Pointer to buffer
} NkMAIDGetVideoImage, FAR* LPNkMAIDGetVideoImage;
```

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

[In case of Get]

The data size for the unacquisition is set to kNkMAIDGetVideoImage.ulDataSize.

[In case of GetArray]

When the client want to get Movie image with kNkMAIDCapOperation_GetArray, the client must allocate the buffer for size to be acquired, and set buffer to kNkMAIDGetVideoImage.pData, and set allocate size to kNkMAIDGetVideoImage.ulElements, and set offset position to kNkMAIDGetVideoImage.ulOffset.

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

It is necessary to set "kNkMAIDArrayType_Unsigned" to kNkMAIDGetVideoImage.ulType.

When the value that exceeds the size of actual movie data is set, module returns kNkMAIDResult_ValueOutOfBounds.

3.188. 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 False: Unlock

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

3.189. CameraType

This will get the camera type.

Capability	kNkMAIDCapability_CameraType
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get
Data	one of eNkMAIDCameraType
	0x2E: D7000

3.190. LensType

This will get the lens type about CPU lens.

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

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

When CPU lens is not attached, the module returns 0

3.191. AFMode

This will set the focus mode for still image shooting.

Capability kNkMAIDCapability_AFMode

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetDefault
kNkMAIDCapOperation_Set

Data one of eNkMAIDAFMode
0: AF-S
1: AF-C
2: AF-A
3: MF fixed
4: MF selected

This capability is affected by the setting of Capability_FocusMode, Capability_LockCamera.When the current value of this capability is 3(MF fixed),the ulOperations of this capability is set to read-only.

the setting of AF mode switch	LockCamera	AFMode
MF setting or a CPU lens is not attached		MF fixed
AF setting (a CPU lens is attached)	ON	AF-S, AF-C, AF-A ,MF selected
	OFF	AF-S, AF-C, AF-A

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

When the value of Capability_FocusAreaMode is “3D-tracking” or “Dynamic(9/21/39 points)”, if the value of this capability is set to AF-S(0), the value of Capability_FocusAreaMode is changed into “Single” automatically.

3.192. AngleLevel

This will show the virtual horizon angle information.

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

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

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

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

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

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

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

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

3.193. MovRecInCardStatus

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

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

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

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

This capability is accepted only during Live view execution.

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

When the Capability_LiveViewStatus is set to OFF(0), movie recording is automatically

stopped by the camera.

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

3.194. MovRecInCardProhibit

This will show the status of movie recording prohibition.

Capability kNkMAIDCapability_MovRecInCardProhibit

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get

Data one of eNkMAIDMovRecInCardProhibit

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

Value	Prohibition condition
0x00001000	During enlarged display of Live view
0x00000800	Card protected
0x00000400	During movie file recording
0x00000200	There is movie data in the buffer.
0x00000100	There is data whose recording destination is the PC in the buffer.
0x00000080	There is data whose recording destination is a card in the buffer.
0x00000008	No free area in the card
0x00000004	Card not formatted
0x00000002	Card error
0x00000001	No card inserted

This Capability becomes effective only while executing a live view.

When the Capability_LiveViewStatus is OFF(0), the value of this capability is not fixed. Even if a value has been entered, it is not guaranteed.

3.195. ActiveSlot

This will set the active slot, when recording media is card.

Capability kNkMAIDCapability_ActiveSlot

Object types Source

ulType kNkMAIDCapType_Unsigned

ulOperations kNkMAIDCapOperation_Get

Data one of eNkMAIDActiveSlot

0 : No card inserted

1 : Slot1

2 : Slot2

3 : Slot1 & Slot2

3.196. SaveMedia

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

Capability	kNkMAIDCapability_SaveMedia
Object types	Source
ulType	kNkMAIDCapType_Unsigned
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set, kNkMAIDCapOperation_GetDefault
Data	one of eNkMAIDSaveMedia 0: Card 1: SDRAM 2: Card + SDRAM

4. Standard Capabilities

4.1. AsyncRate

Capability	kNkMAIDCapability_AsyncRate
Object types	Module
ulType	kNkMAIDArrayType_Unsigned
ulOperations	kNkMAIDCapOperation_Get

4.2. ProgressProc

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

4.3. EventProc

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

4.4. DataProc

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

4.5. UIRequestProc

Capability	kNkMAIDCapability_UIRequestProc
Object types	Module
ulType	kNkMAIDCapType_Callback
ulOperations	kNkMAIDCapOperation_Get, kNkMAIDCapOperation_Set

4.6. IsAlive

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

4.7. Children

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

4.8. State

Capability kNkMAIDCapability_State

Not supported

4.9. Name

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

The image saved on SDRAM is taken a picture on the mode Capability_SaveMedia is "1:SDRAM", the value of this capability about Item、Image、Thumbnail is "DSC_0000.xxx".

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

4.10. Description

Capability kNkMAIDCapability_Description

Not supported

4.11. Interface

Capability kNkMAIDCapability_Interface
Object types Source
ulType kNkMAIDCapType_String
ulOperations kNkMAIDCapOperation_Get

4.12. DataTypes

Capability kNkMAIDCapability_DataTypes
Object types Source, Item
ulType kNkMAIDCapType_Unsigned
ulOperations kNkMAIDCapOperation_Get

4.13. DateTime

Capability kNkMAIDCapability_DateTime
Object types Item
ulType kNkMAIDCapType_DateTime
ulOperations kNkMAIDCapOperation_Get

4.14. StoredBytes

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

4.15. Eject

Capability kNkMAIDCapability_Eject

Not supported

4.16. Feed

Capability kNkMAIDCapability_Feed

Not supported

4.17. Capture

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

Capability kNkMAIDCapability_Capture
Object types Source
ulType kNkMAIDCapType_Process
ulOperations kNkMAIDCapOperation_Start

When the Capability_ShootingMode is CL(1) or CH(2), the number of shots set by the Capability_ContinuousShootingNum is taken on continuous shooting mode.

When the Capability_ShootingMode is Mirror up(4), the ulVisibility and ulOperation of this capability is set to invalid.

When preview image about shooting image is prepared, kNkMAIDEvent_AddPreviewImage is issued by module. （However, if an image saved on card, the preview data is not generated.） And, when main image is prepared, kNkMAIDEvent_Add is issued to source object.

If the client execute this capability while doing Live view, Live view will be stopped by camera, and the camera take a picture with AF position set on Live view without Auto focus.

The media saved an image is specified by Capability_SaveMedia. When there is not free space in specified media, this capability returns kMAIDResult_MediaFull. And this capability returns kNkMAIDResult_NoMedia when card is formatted or no card is inserted.

This Capability becomes invalid during movie recording.

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

This will execute phase detection AF.

Capability kNkMAIDCapability_AutoFocus
Object types Source
ulType kNkMAIDCapType_Process
ulOperations kNkMAIDCapOperation_Start

When Capability_FocusMode is MF, or a CPU lens is not attached, or Capability_Live ViewStatus is 1(ON), the ulVisibility and the ulOperations of this capability is invalid.

When Capability_FocusMode is 4(AF-F), the camera returns kNkMAIDResult_DeviceBusy because AF always operates.

4.28. AutoFocusPt

Capability kNkMAIDCapability_AutoFocusPt

Not supported

4.29. Focus

Capability kNkMAIDCapability_Focus

Not supported

4.30. Coords

Capability kNkMAIDCapability_Coords

Not supported

4.31. Resolution

Capability kNkMAIDCapability_Resolution

Not supported

4.32. Preview

Capability kNkMAIDCapability_Preview

Not supported

4.33. Negative

Capability kNkMAIDCapability_Negative

Not supported

4.34. Bits

Capability kNkMAIDCapability_Bits

Not supported

4.35. Planar

Capability kNkMAIDCapability_Planar

Not supported

4.36. Lut

Capability kNkMAIDCapability_Lut

Not supported

4.37. Transparency

Capability kNkMAIDCapability_Transparency

Not supported

4.38. Threshold

Capability kNkMAIDCapability_Threshold

Not supported

4.39. Pixels

Capability kNkMAIDCapability_Pixels

Object types Image, Thumbnail, Video

ulType kNkMAIDCapType_Size

ulOperations kNkMAIDCapOperation_Get

4.40. ForceScan

Capability kNkMAIDCapability_ForceScan

Not supported

4.41. ForcePrescan

Capability kNkMAIDCapability_ForcePrescan

Not supported

4.42. ForceAutoFocus

Capability kNkMAIDCapability_ForceAutoFocus

Not supported

4.43. NegativeDefault

Capability kNkMAIDCapability_NegativeDefault

Not supported

4.44. Firmware

Capability kNkMAIDCapability_Firmware

Not supported

4.45. CommunicationLevel1

Capability kNkMAIDCapability_CommunicationLevel1

Not supported

4.46. CommunicationLevel2

Capability kNkMAIDCapability_CommunicationLevel2

Not supported

4.47. BatteryLevel

Capability kNkMAIDCapability_BatteryLevel
Object types Source
ulType kNkMAIDCapType_Integer
ulOperations kNkMAIDCapOperation_Get
Data 1、20、40、60、80、100

This will show the remain of battery by percent.

The camera returns the 6 kind of value, 1, 20, 40, 60, 80, 100.

When the value of this capability is 1, the current camera status will be set to the prohibition of taking a picture, and the value of Capability_LiveViewProhibit is set to "battery shortage"(0x00000100) .

When the external power supply is used, this capability returns -1.

4.48. FreeBytes

Not supported

4.49. FreeItems

Not supported

4.50. Remove

Not supported

4.51. FlashMode

Capability kNkMAIDCapability_FlashMode

Object types Source

ulType kNkMAIDCapType_Enum

kNkMAIDArrayType_Unsigned

ulOperations kNkMAIDCapOperation_Get, kNkMAIDCapOperation_GetArray,

kNkMAIDCapOperation_Set,

Data one of eNkMAIDFlashMode, eNkMAIDFlashModeDX2

0: FrontCurtain

1: Rear-curtain sync

2: Slow

3: Red-eye reduction

4: Slow sync with red-eye reduction

5: Slow rear-curtain sync

262 : Flash Off

Flash mode / ExposureMode / SceneMode	FrontCurtain	Slow	Rear-curtain sync (Slow rear-curtain sync on P,A)	Red-eye reduction	Slow sync with red-eye reduction	flash off
P, A	●,△	●,△	●,△	●,△	●,△	—
S, M	●,△	—	●,△	●,△	—	—
Auto Portrait (SCENE) Close up (SCENE) Child (SCENE) Party / Indoor (SCENE) Pet Portrait (SCENE)	●,△	—	—	●,△	—	●
Landscape (SCENE) Sports (SCENE) Night Landscape (SCENE) Beach / Snow (SCENE) Sunset (SCENE) Dusk/Dawn (SCENE) Candlelight (SCENE) Blossom (SCENE) Autumn Colors (SCENE) Silhouette (SCENE) High Key (SCENE) Low Key (SCENE)	△	—	—	△	—	●
Flash Off	—	—	—	—	—	●,△
Food (SCENE)	●,△	—	—	—	—	—
Night Portrait (SCENE)	—	●,△	—	—	●,△	●

●: When Internal speed light is active(=external speed light is not active), it is available.

△: When external speed light is active (=external speed light is attached and power on), it is available.

—: Not supported

When Capability_ExternalNewTypeFlashMode is (7) “Repeating flash” and Capability_ExposureMode is P, S, A, M, 1 “[Rear-curtain sync” can not be set and 0 “FrontCurtain” will be set.

When the build-in flash and external flash are invalid, the ulVisibility of this capability is invalid and the ulOperations is set to read-only and the current value is invalid.

When internal speed light is active and Capability_ExposureMode is “Flash Off” (13), or Landscape(SCENE), or Sports(SCENE), or Night Landscape (SCENE), or Beach/Snow (SCENE), or Sunset (SCENE), or Dusk/Dawn (SCENE), or Candlelight (SCENE), or Blossom (SCENE), or Autumn Colors (SCENE), or Silhouette (SCENE), or High Key (SCENE), or Low Key (SCENE) the ulOperations of this capability is set to read-only.

When internal speed light is active and Capability_ExposureMode is “U1” (15), or U2(SCENE), It applies to the exposure mode set by Capability_UserMode1 or Capability_UserMode2.

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 a 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 Item ID is same as Preview ID indicated by kNkMAIDEvent_AddPreviewImage.

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 a object .

Event kNkMAIDEvent_RemoveChild

Object types Module, Source, Item

data parameter Removed child ID

5.3. WarmingUp

Event kNkMAIDEvent_WarmingUp

Not supported

5.4. WarmedUp

Event kNkMAIDEvent_WarmedUp

Not supported

5.5. CapChange

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

Event kNkMAIDEvent_CapChange

Object types Module, Source, Item

data parameter Capability ID

In the following cases, this event will be issued.

- When the content of structure "NkMAIDCapInfo" of capability was changed.
- When the array data of capability with the type of kNkMAIDCapType_Array was changed.

5.6. OrphanedChildren

Event kNkMAIDEvent_OrphanedChildren

Not supported

5.7. CapChangeValueOnly

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

Event kNkMAIDEvent_CapChangeValueOnly

Object types Module, Source, Item, Data

data parameter Capability ID

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

5.8. AddPreviewImage

This will be issued when the preview image can be acquired.

Event kNkMAIDEvent_AddPreviewImage

Object types Source

data parameter Preview ID

This event notifies that the client can get the preview image about taking a picture on DRAM.

When the client take a picture on ”RAW + JPEG(XXX)” mode, the preview event is issued only for JPEG image. Preview image event is not issued for RAW image and for a dust off ref photo.

Preview ID will be set to the data parameter of call back function. The data type of Preview ID is ULONG.

Item object will not be created when this event is issued, so client can’t open Item Object with Preview ID. The client can open Item Object after the kNkMAIDEvent_AddImage event reception.

5.9. CaptureComplete

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

Event	kNkMAIDEvent_CaptureComplete
Object types	Source
data parameter	1 : The all SDRAM images by Capture, AFCapture, CaptureDustImage are finished to read or deleted. 0: The all images by Capture, AFCapture, CaptureDustImage are finished to record in card.

It shows that the all images are finished to record in card or the all SDRAM images are finished to read or deleted.

This event is not issued in case of shooting by shutter-release button.

5.10. 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.

6. Vendor Unique Results

6.1. ApertureFEE

The aperture is not set maximum F number.

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

6.2. BufferNotReady

This is not used in the current module.

6.3. NormalTTL

The speedlight is set TTL mode.

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

6.4. MediaFull

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

Result	kNkMAIDResult_MediaFull
Command	Start
Capability	Capture, AFCapture, CaptureDustImage
Explanation	There is no free space at the specified media, so the client can not take a picture.
Expected Action	The client displays the message that the camera cannot take a picture and is waiting for next command.

6.5. InvalidMedia

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

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

6.6. EraseFailure

This is not used in the current module.

6.7. CameraNotFound

The module did not find a camera on the bus.

Result	kNkMAIDResult_CameraNotFound
Command	The commands need access to the camera. (most of the commands for the Source, the Item or the Data object.)
Explanation	The camera was disconnected. If the client sends Async command to the Module object at intervals, it can tell that the camera is reconnected by AddChild event.
Expected Action	The client displays the message that the camera was disconnected and is waiting for next command.

6.8. BatteryDontWork

The main battery in the camera is used up.

Result	kNkMAIDResult_BatteryDontWork
Command	Start
Capability	Capture, AFCapture, CaptureDustImage, PreCapture
Explanation	The camera cannot take a picture because of the battery.
Expected Action	The client displays the message that the camera cannot take a picture and suggests changing battery.

6.9. ShutterBulb

The exposure time is set to Bulb.

Result	kNkMAIDResult_ShutterBulb
Command	Start
Capability	Capture, AFCapture, CaptureDustImage
Explanation	The camera cannot execute capture command if the Capability_ShutterSpeedis set to bulb.
Expected Action	The client displays the message that the camera cannot take a picture and is waiting for next command.

6.10. OutOfFocus

Auto focus operation is failed.

Result	kNkMAIDResult_OutOfFocus
Command	Start
Capability	Capture, AutoFocus, AFCapture, CheckContrastAF
Explanation	When the Capability_FocusMode is AF-S(1) and auto focus operation is failed, the camera cannot take a picture. Then this error is returned for the start of Capability_Capture or Capability_AFCapture. In case of the Capability_AutoFocus and Capability_CheckContrastAF, this error will be returned when auto focus is failed.
Expected Action	The client displays the message that the camera is out of focus and is waiting for next command.

6.11. Protected

This is not used in the current module.

6.12. FileExists

This is not used in the current module.

6.13. SharingViolation

This is not used in the current module.

6.14. DataTransFailure

An error occurred while data transference.

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

6.15. SessionFailure

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

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

6.16. FileRemoved

This is not used in the current module.

6.17. BusReset

This command was aborted because bus-reset occurred.

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

6.18. NonCPULens

This is not used in the current module.

6.19. ReleaseButtonPressed

This is not used in the current module.

6.20. BatteryExhausted

This is not used in the current module.

6.21. CaptureFailure

The camera failed in measuring value for white balance preset data.

Result	kNkMAIDResult_CaptureFailure
Command	Start
Capability	PreCapture
Explanation	When it fails in white balance measurement(Capability_PreCapture), this error is returned.
Expected Action	The client displays the message to take a picture again and is waiting for next command.

6.22. InvalidString

This is not used in the current module.

6.23. NotInitialized

This is not used in the current module.

6.24. CaptureDisable

This is not used in the current module.

6.25. DeviceBusy

A camera did not receive a command.

Result	kNkMAIDResult_DeviceBusy
Command	any command
Capability	any capability
Explanation	Since a camera is in the state where the command is not receivable, when it is not able to perform, this error returns.
Expected Action	This command is sent again or a display of a user interface is returned to the state before command execution.

6.26. CaptureDustFailure

The camera failed in taking a dust off ref photo.

Result	kNkMAIDResult_CaptureDustFailure
Command	Start
Capability	CaptureDustImage
Explanation	When it fails in taking a dust off ref photo(Capability_CaptureDustImage), this error is returned.
Expected Action	Do nothing.

6.27. ICADown

Enumeration of device can not be done correctly because ICA does not work on Mac OS X.

Result	kNkMAIDResult_ICADown
Command	EnumChildren
Capability	Children
Explanation	This error is returned when enumeration of device can not be done correctly because ICA does not work. This error code is used only on Mac OS X.
Expected Action	The client aborts the command and capability of device search. The client displays the message that the camera must be powered off and client application needs to restart.

6.28. NotLiveView

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

Result	kNkMAIDResult_NotLiveView
Command	Start, Set
Capability	GetLiveViewImage
Explanation	When Live view was automatically stopped by the factor of the camera. (include the case of that the live view time limit passed.) this error is returned.
Expected Action	The client displays an error message and is waiting for next command.

6.29. MFDriveEnd

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

Result	kNkMAIDResult_MFDriveEnd
Command	Set
Capability	MFDrive
Explanation	When the focus position reached the end of focus area by Capability_MFDrive, this error is returned.
Expected Action	The client displays an error message and is waiting for next command.

6.30. UnformattedMedia

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

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

6.31. MediaReadOnly

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

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

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. Capabilities that can be Set during Movie Recording

3.3.	WBMode	3.42.	ISOAutoHiLimit
3.4.	Sensitivity	3.59.	AfModeAtLiveView
3.7.	WBTuneAuto	3.60.	LiveViewAF
3.9.	WBTuneIncandescent	3.113.	BracketingVary
3.10.	WBFluorescentType	3.114.	BracketingOrder
3.11.	WBTuneFluorescent	3.139.	ShutterSpeed
3.12.	WBTuneSunny	3.140.	FlexibleProgram
3.13.	WBTuneFlash	3.142.	Aperture ※1
3.14.	WBTuneShade	3.143.	MeteringMode
3.15.	WBTuneCloudy	3.145.	ExposureComp
3.16	WBTuneColorTemp	3.146.	ShootingMode
3.17.	WBTuneColorTempAdjust	3.147.	ContinuousShootingNum
3.18.	WBTunePreset1	3.149.	EnabelBracketing
3.19.	WBTunePreset2	3.150.	AEBracketingStep
3.20.	WBTunePreset3	3.151.	WBBracketingStep
3.21.	WBTunePreset4	3.152.	BracketingType
3.22.	WBTunePreset5	3.153.	ADLBracketingType
3.30.	ISOControl	3.170.	InternalFlashComp
3.40.	Active-D-Lighting	3.181.	ContrastAFArea
3.41.	ISOAutoShutterTime	4.51.	FlashMode

※ 1 When it meets all the following requirements, the ulOperations of this capability is set to read-only.

- Capability_LiveViewStatus is set to ON.
- The exposure mode is set to Manual.
- Capability_MovieManualSetting is set to ON.

9. History

- Rev.1.1 Decmber 9, 2016
  - Added the information of E type lens.
    - 3.175. LensInfo
    - 3.190. LensType

- Rev.1.0 December 1, 2010 First version