C

Protocol Encodings

Extension Name

# of Bytes	Value	Description
3		upper-case ASCII string "XIE"
	88	X
	73	I
	69	E

Types

Alignment

# of Bytes	Value	Description
1		*alignment:*
	1	***Alignable***
	2	***Arbitrary***

ArithmeticOp

# of Bytes	Value	Description
1		*operator:*
	1	***Add***
	2	***Sub***
	3	***SubRev***
	4	***Mul***
	5	***Div***
	6	***DivRev***
	7	***Min***
	8	***Max***
	9	***Gamma***

ColorAllocTechnique

# of Bytes	Value	Description
2		*number:*
	0	***Default***
	2	***ColorAlloc_AllocAll***
	4	***ColorAlloc_Match***
	6	***ColorAlloc_Requantize***

ColorList

# of Bytes	Value	Description
4	CARD32	*color-list* id (top 3 bits guaranteed to be zero)

CompareOp

# of Bytes	Value	Description
1		*operator:*
	1	***LT***
	2	***LE***
	3	***EQ***
	4	***NE***
	5	***GT***
	6	***GE***

Constant

# of Bytes	Value	Description
4	**Float**	*constant*[0]
4	**Float**	*constant*[1]
4	**Float**	*constant*[2]

ConstrainTechnique

# of Bytes	Value	Description
2		*number:*
	2	***Constrain_ClipScale***
	4	***Constrain_HardClip***

ConvertFromRGBTechnique

# of Bytes	Value	Description
2		*number:*
	2	***ConvertFrom_CIELab***
	4	***ConvertFrom_CIEXYZ***
	6	***ConvertFrom_YCbC***
	8	***ConvertFrom_YCC***

ConvertToRGBTechnique

# of Bytes	Value	Description
2		*number:*
	2	***ConvertTo_CIELab***
	4	***ConvertTo_CIEXYZ***
	6	***ConvertTo_YCbC***
	8	***ConvertTo_YCC***

ConvolveTechnique

# of Bytes	Value	Description
2		*number:*
	0	***Default***
	2	***Convolve_Constant***
	4	***Convolve_Replicate***

DataClass

# of Bytes	Value	Description
1		*data-class:*
	1	***SingleBand***
	2	***TripleBand***

DataStream

# of Bytes	Value	Description
n	`LISTofCARD8`	*data*

DataType

# of Bytes	Value	Description
1		*data-type:*
	1	***Constrained***
	2	***Unconstrained***

DecodeTechnique

# of Bytes	Value	Description
2		*number:*
	2	***Decode_UncompressedSingle***
	3	***Decode_UncompressedTriple***
	4	***Decode_CCITT-G31D***
	6	***Decode_CCITT-G32D***
	8	***Decode_CCITT-G42D***
	10	***Decode_JPEG-Baseline***
	12	***Decode_JPEG-Lossless***
	14	***Decode_TIFF-2***
	16	***Decode_TIFF-PackBits***

DitherTechnique

# of Bytes	Value	Description
2		*number:*
	0	***Default***
	2	***Dither_ErrorDiffusion***
	4	***Dither_Ordered***

EncodeTechnique

# of Bytes	Value	Description
2		*number:*
	1	***Encode_ServerChoice***
	2	***Encode_UncompressedSingle***
	3	***Encode_UncompressedTriple***
	4	***Encode_CCITT-G31D***
	6	***Encode_CCITT-G32D***
	8	***Encode_CCITT-G42D***
	10	***Encode_JPEG-Baseline***
	12	***Encode_JPEG-Lossless***
	14	***Encode_TIFF-2***
	16	***Encode_TIFF-PackBits***

Executable

# of Bytes	Value	Description
4		*name-space:*
	Photospace	if `immediate` **Photoflo**
	0	if `stored` **Photoflo**
4		*flo-id:*
	`CARD32`	if `immediate` **Photoflo**
	Photoflo	if `stored` **Photoflo**

ExportNotify

# of Bytes	Value	Description
1		*notify:*
	1	***Disable***
	2	***FirstData***
	3	***NewData***

ExportState

# of Bytes	Value	Description
1		state:
	1	***ExportDone***
	2	***ExportMore***
	3	***ExportEmpty***
	4	***ExportError***

Float

# of Bytes	Value	Description
4	<32-bits>	IEEE single-precision float

GamutTechnique

# of Bytes	Value	Description
2		*number:*
	0	***Default***
	1	***Gamut_None***
	2	***Gamut_ClipRGB***

GeometryTechnique

# of Bytes	Value	Description
2		*number:*
	0	***Default***
	2	***Geometry_Antialias***
	4	***Geometry_AntialiasByArea***
	6	***Geometry_AntialiasByLowpass***
	8	***Geometry_BilinearInterpolation***
	10	***Geometry_Gaussian***
	12	***Geometry_NearestNeighbor***

HistogramData

# of Bytes	Value	Description
4	`CARD32`	*value*
4	`CARD32`	*count*

HistogramShape

# of Bytes	Value	Description
2		*number:*
	2	***Histogram_Flat***
	4	***Histogram_Gaussian***
	6	***Histogram_Hyperbolic***

Interleave

# of Bytes	Value	Description
1		*interleave:*
	1	***BandByPixel***
	2	***BandByPlane***

Levels

# of Bytes	Value	Description
4	CARD32	*levels*[0]
4	CARD32	*levels*[1]
4	CARD32	*levels*[2]

LUT

# of Bytes	Value	Description
4	CARD32	*lut* id (top 3 bits guaranteed to be zero)

MathOp

# of Bytes	Value	Description
1		*operator:*
	1	***Exp***
	2	***Ln***
	3	***Log2***
	4	***Log10***
	5	***Square***
	6	***Sqrt***

Matrix

# of Bytes	Value	Description
4	**Float**	*matrix*[0,0]
4	**Float**	*matrix*[0,1]
4	**Float**	*matrix*[0,2]
4	**Float**	*matrix*[1,0]
4	**Float**	*matrix*[1,1]
4	**Float**	*matrix*[1,2]
4	**Float**	*matrix*[2,0]
4	**Float**	*matrix*[2,1]
4	**Float**	*matrix*[2,2]

Orientation

# of Bytes	Value	Description
1		*order:*
	1	***LSFirst***
	2	***MSFirst***

PhotoElement

Refer to the individual Import, Process, and Export encodings.

Photoflo

# of Bytes	Value	Description
4	CARD32	stored *photoflo* id (top 3 bits guaranteed to be zero)

PhotofloOutcome

# of Bytes	Value	Description
1		*outcome:*
	1	***FloSuccess***
	2	***FloAbort***
	3	***FloError***

PhotofloState

# of Bytes	Value	Description
1		*state:*
	1	***Inactive***
	2	***Active***
	3	***Nonexistent***

Photomap

# of Bytes	Value	Description
4	CARD32	*photomap* id (top 3 bits guaranteed to be zero)

Photospace

# of Bytes	Value	Description
4	CARD32	*photospace* id (top 3 bits guaranteed to be zero)

Phototag

# of Bytes	Value	Description
2	CARD16	*phototag* (index within PhotoElement list)

ProcessDomain

# of Bytes	Value	Description
4	INT32	offset-x
4	INT32	offset-y
2	**Phototag**	*domain*

Rectangle

# of Bytes	Value	Description
4	INT32	*x*
4	INT32	*y*
4	CARD32	*width*
4	CARD32	*height*

ROI

# of Bytes	Value	Description
4	CARD32	*roi* id (top 3 bits guaranteed to be zero)

ServiceClass

# of Bytes	Value	Description
1		*class:*
	1	***Full***
	2	***DIS***

TechniqueGroup

# of Bytes	Value	Description
1		*group:*
	0	***Default***
	1	***All***
	2	***ColorAlloc***
	4	***Constrain***
	6	***ConvertFromRGB***
	8	***ConvertToRGB***
	10	***Convolve***
	12	***Decode***
	14	***Dither***
	16	***Encode***
	18	***Gamut***
	20	***Geometry***
	22	***Histogram***
	24	***WhiteAdjust***

TechniqueRec

# of Bytes	Value	Description
1	BOOL	*needs-parameters*
1	**TechniqueGroup**	*group*
2	CARD16	*number*
1	CARD8	*speed* (0: slowest, 255: fastest)
1	n	length of *name*
2		unused
n	LISTofCARD8	*name* (ASCII string)
p		unused, p=pad(n)

Tile

# of Bytes	Value	Description
2	**Phototag**	*src*
2		unused
4	INT32	*dst-x*
4	INT32	*dst-y*

Tripletof*type*

# of Bytes	Value	Description
size of *type*	<size of *type* bytes>	value[0]
size of *type*	<size of *type* bytes>	value[1]
size of *type*	<size of *type* bytes>	value[2]

WhiteAdjustTechnique

# of Bytes	Value	Description
2		*number:*
	0	***Default***
	1	***WhiteAdjust_None***
	2	***WhiteAdjust_CIELabShift***

Requests and Replies

QueryImageExtension request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	1	XIE minor opcode
2	2	request length
2	CARD16	client-major-version
2	CARD16	client-minor-version

QueryImageExtension reply

# of Bytes	Value	Description
1	1	reply
1		unused
2	CARD16	sequence number
4	n	reply length (length of *constrained-levels*)
2	CARD16	*server-major-version*
2	CARD16	*server-minor-version*
1	**ServiceClass**	*service-class*
1	**Alignment**	*alignment*
2	CARD16	*unconstrained-mantissa*
4	INT32	*unconstrained-max-exp*
4	INT32	*unconstrained-min-exp*
8		unused
4n	LISTofCARD32	*constrained-levels*

QueryTechniques request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	2	XIE minor opcode
2	2	request length
1	**TechniqueGroup**	*technique-group*
3		unused

QueryTechniques reply

# of Bytes	Value	Description
1	1	reply
1		unused
2	CARD16	sequence number
4	n/4	reply length
2	CARD16	number of *techniques*
22		unused
n	LISTof**TechniqueRec**	*techniques*

CreateColorList request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	3	XIE minor opcode
2	2	request length
4	**ColorList**	*color-list*

DestroyColorList request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	4	XIE minor opcode
2	2	request length
4	**ColorList**	*color-list*

PurgeColorList request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	5	XIE minor opcode
2	2	request length
4	**ColorList**	*color-list*

QueryColorList request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	6	XIE minor opcode
2	2	request length
4	**ColorList**	*color-list*

QueryColorList reply

# of Bytes	Value	Description
1	1	reply
1		unused
2	CARD16	sequence number
4	n	reply length (number of *colors*)
4	COLORMAP	*colormap*
20		unused
4n	LISTofCARD32	list of *colors*

CreateLUT request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	7	XIE minor opcode
2	2	request length
4	**LUT**	*lut*

DestroyLUT request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	8	XIE minor opcode
2	2	request length
4	**LUT**	*lut*

CreatePhotomap request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	9	XIE minor opcode
2	2	request length
4	**Photomap**	*photomap*

DestroyPhotomap request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	10	XIE minor opcode
2	2	request length
4	**Photomap**	*photomap*

QueryPhotomap request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	11	XIE minor opcode
2	2	request length
4	**Photomap**	*photomap*

QueryPhotomap reply

# of Bytes	Value	Description
1	1	reply
1	BOOL	*populated*
2	CARD16	sequence number
4	4	reply length
1	**DataClass**	*data-class*
1	**DataType**	*data-type*
2	**DecodeTechnique**	
12	**Tripletof**CARD32	*width*
12	**Tripletof**CARD32	*height*
12	**Levels**	*levels*

CreateROI request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	12	XIE minor opcode
2	2	request length
4	**ROI**	*roi*

DestroyROI request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	13	XIE minor opcode
2	2	request length
4	**ROI**	*roi*

CreatePhotospace request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	14	XIE minor opcode
2	2	request length
4	**Photospace**	*name-space*

DestroyPhotospace request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	15	XIE minor opcode
2	2	request length
4	**Photospace**	*name-space*

ExecuteImmediate request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	16	XIE minor opcode
2	4+n/4	request length
8	**Executable**	*instance*
2	CARD16	number of elements in *element-list*
1	BOOL	*notify*
1		unused
n	LISTof**PhotoElement**	*element-list*

CreatePhotoflo request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	17	XIE minor opcode
2	3+n/4	request length
4	**Photoflo**	*photoflo*
2	CARD16	number of elements in *element-list*
2		unused
n	LISTof**PhotoElement**	*element-list*

DestroyPhotoflo request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	18	XIE minor opcode
2	2	request length
4	**Photoflo**	*photoflo*

ExecutePhotoflo request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	19	XIE minor opcode
2	3	request length
4	**Photoflo**	*photoflo*
1	BOOL	*notify*
3		unused

ModifyPhotoflo request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	20	XIE minor opcode
2	3+n/4	request length
4	**Photoflo**	*photoflo*
2	**Phototag**	*start*
2	CARD16	number of elements in *element-list*
n	LISTof**PhotoElement**	*element-list*

RedefinePhotoflo request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	21	XIE minor opcode
2	3+n/4	request length
4	**Photoflo**	*photoflo*
2	CARD16	number of elements in *element-list*
2		unused
n	LISTof**PhotoElement**	*element-list*

PutClientData request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	22	XIE minor opcode
2	5+(n+p)/4	request length
8	**Executable**	*instance*
2	**Phototag**	*element*
1	BOOL	*final*
1	CARD8	*band-number*
4	n	*byte-count* (length of *data* in bytes)
n	LISTofCARD8	*data*
p		unused, p=pad(n)

GetClientData request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	23	XIE minor opcode
2	5	request length
8	**Executable**	*instance*
4	CARD32	*max-bytes*
2	**Phototag**	*element*
1	BOOL	*terminate*
1	CARD8	band-number

GetClientData reply

# of Bytes	Value	Description
1	1	reply
1	**ExportState**	*new-state*
2	CARD16	sequence number
4	(n+p)/4	reply length
4	n	*byte-count* (length of *data* in bytes)
20		unused
n	LISTofCARD8	*data*
p		unused, p=pad(n)

QueryPhotoflo request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	24	XIE minor opcode
2	3	request length
8	**Executable**	*instance*

QueryPhotoflo reply

# of Bytes	Value	Description
1	1	reply
1	**PhotofloState**	*state*
2	CARD16	sequence number
4	(e+a)/2+(ep+ap)/4	reply length
2	e	*data-expected* count
2	a	*data-available* count
20		unused
2e	LISTof**Phototag**	*data-expected*
ep		unused, ep=pad(e)
2a	LISTof**Phototag**	*data-available*
ap		unused, ap=pad(a)

Await request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	25	XIE minor opcode
2	3	request length
8	**Executable**	*instance*

Abort request

# of Bytes	Value	Description
1	CARD8	XIE major opcode
1	26	XIE minor opcode
2	3	request length
8	**Executable**	*instance*

Import Elements

ImportClientLUT

# of Bytes	Value	Description
2	1	element type
2	8	element length
1	**DataClass**	*class*
1	**Orientation**	*band-order*
2		unused
12	**Tripletof**CARD32	*length*
12	**Levels**	*levels*

ImportClientPhoto

# of Bytes	Value	Description
2	2	element type
2	12+n	element length
1	BOOL	*notify*
1	**DataClass**	*class*
2		unused
12	**Tripletof**CARD32	*width*
12	**Tripletof**CARD32	*height*
12	**Levels**	*levels*
2	**DecodeTechnique**	*decode*
2	n	length of *decode-params*
4n	<technique-dependent>	*decode-params*

ImportClientROI

# of Bytes	Value	Description
2	3	element type
2	2	element length
4	CARD32	*rectangles*

ImportDrawable

# of Bytes	Value	Description
2	4	element type
2	6	element length
4	DRAWABLE	*drawable*
2	INT16	*src-x*
2	INT16	*src-y*
2	CARD16	*width*
2	CARD16	*height*
4	CARD32	*fill*
1	BOOL	*notify*
3		unused

ImportDrawablePlane

# of Bytes	Value	Description
2	5	element type
2	7	element length
4	`DRAWABLE`	*drawable*
2	`INT16`	*src-x*
2	`INT16`	*src-y*
2	`CARD16`	*width*
2	`CARD16`	*height*
4	`CARD32`	*fill*
4	`CARD32`	*bit-plane*
1	`BOOL`	*notify*
3		unused

ImportLUT

# of Bytes	Value	Description
2	6	element type
2	2	element length
4	**LUT**	*lut*

ImportPhotomap

# of Bytes	Value	Description
2	7	element type
2	3	element length
4	**Photomap**	*photomap*
1	`BOOL`	*notify*
3		unused

ImportROI

# of Bytes	Value	Description
2	8	element type
2	2	element length
4	**ROI**	*roi*

Process Elements

Arithmetic

# of Bytes	Value	Description
2	9	element type
2	8	element length
2	**Phototag**	*src-1*
2	**Phototag**	*src-2*
10	**ProcessDomain**	*domain*
1	**ArithmeticOp**	*operator*
1	CARD8	*band-mask*
12	**Constant**	*constant*

BandCombine

# of Bytes	Value	Description
2	10	element type
2	3	element length
2	**Phototag**	*src-1*
2	**Phototag**	*src-2*
2	**Phototag**	*src-3*
2		unused

BandExtract

# of Bytes	Value	Description
2	11	element type
2	7	element length
2	**Phototag**	*src*
2		unused
4	CARD32	*levels*
4	**Float**	*bias*
12	**Constant**	*coefficients*

BandSelect

# of Bytes	Value	Description
2	12	element type
2	2	element length
2	**Phototag**	*src*
1	CARD8	*band-number*
1		unused

Blend

# of Bytes	Value	Description
2	13	element type
2	10	element length
2	**Phototag**	*src-1*
2	**Phototag**	*src-2*
2	**Phototag**	*alpha*
2		unused
10	**ProcessDomain**	*domain*
1	CARD8	*band-mask*
1		unused
12	**Constant**	*constant*
4	**Float**	*alpha-const*

Compare

# of Bytes	Value	Description
2	14	element type
2	9	element length
2	**Phototag**	*src-1*
2	**Phototag**	*src-2*
10	**ProcessDomain**	*domain*
1	**CompareOp**	*operator*
1	BOOL	*combine*
12	**Constant**	*constant*
1	CARD8	*band-mask*
3		unused

Constrain

# of Bytes	Value	Description
2	15	element type
2	6+n	element length
2	**Phototag**	*src*
2		unused
12	**Levels**	*levels*
2	**ConstrainTechnique**	*constrain*
2	n	length of *constrain-params*
4n	<technique-dependent>	*constrain-params*

ConvertFromIndex

# of Bytes	Value	Description
2	16	element type
2	3	element length
2	**Phototag**	*src*
1	**DataClass**	*class*
1	CARD8	*precision* (valid range 1..16)
4	COLORMAP	*colormap*

ConvertFromRGB

# of Bytes	Value	Description
2	17	element type
2	3+n	element length
2	**Phototag**	*src*
2		unused
2	**ConvertFromRGBTechnique**	*convert*
2	n	length of *convert-params*
4n	<technique-dependent>	*convert-params*

ConvertToIndex

# of Bytes	Value	Description
2	18	element type
2	5+n	element length
2	**Phototag**	*src*
1	BOOL	*notify*
1		unused
4	COLORMAP	*colormap*
4	**ColorList**	*color-list*
2	**ColorAllocTechnique**	*color-alloc*
2	n	length of *color-alloc-params*
4n	<technique-dependent>	*color-alloc-params*

ConvertToRGB

# of Bytes	Value	Description
2	19	element type
2	3+n	element length
2	**Phototag**	*src*
2		unused
2	**ConvertToRGBTechnique**	*convert*
2	n	length of *convert-params*
4n	<technique-dependent>	*convert-params*

Convolve

# of Bytes	Value	Description
2	20	element type
2	$6+n^2+m$	element length
2	**Phototag**	*src*
2		unused
10	**ProcessDomain**	*domain*
1	CARD8	*band-mask*
1	n	*kernel-size*
2	**ConvolveTechnique**	*convolve*
2	m	length of *convolve-params*
$4n^2$	LISTof**Float**	*kernel*
4m	<technique-dependent>	*convolve-params*

Dither

# of Bytes	Value	Description
2	21	element type
2	6+n	element length
2	**Phototag**	*src*
1	CARD8	*band-mask*
1		unused
12	**Levels**	*levels*
2	**DitherTechnique**	*dither*
2	n	length of *dither-params*
4n	<technique-dependent>	*dither-params*

Geometry

# of Bytes	Value	Description
2	22	element type
2	14+n	element length
2	**Phototag**	*src*
1	CARD8	*band-mask*
1		unused
4	CARD32	*width*
4	CARD32	*height*
4	**Float**	*coefficients*: a
4	**Float**	*coefficients*: b
4	**Float**	*coefficients*: c
4	**Float**	*coefficients*: d
4	**Float**	*coefficients*: t_x
4	**Float**	*coefficients*: t_y
12	**Constant**	*constant*
2	**GeometryTechnique**	*sample*
2	n	length of *sample-params*
4n	<technique-dependent>	*sample-params*

Logical

# of Bytes	Value	Description
2	23	element type
2	8	element length
2	**Phototag**	*src-1*
2	**Phototag**	*src-2*
10	**ProcessDomain**	*domain*
1	`GCfunction`*	*operator*
1	`CARD8`	*band-mask*
12	**Constant**	*constant*

(* see note on page 7-20)

MatchHistogram

# of Bytes	Value	Description
2	24	element type
2	6+n	element length
2	**Phototag**	*src*
2		unused
10	**ProcessDomain**	*domain*
2		unused
2	**HistogramShape**	*shape*
2	n	length of *shape-params*
4n	<technique-dependent>	*shape-params*

Math

# of Bytes	Value	Description
2	25	element type
2	5	element length
2	**Phototag**	*src*
2		unused
10	**ProcessDomain**	*domain*
1	**MathOp**	*operator*
1	`CARD8`	band-mask

PasteUp

# of Bytes	Value	Description
2	26	element type
2	7+3n	element length
2	n	number of *tiles*
2		unused
4	`CARD32`	*width*
4	`CARD32`	*height*
12	**Constant**	*constant*
12n	`LISTof`**Tile**	*tiles*

Point

# of Bytes	Value	Description
2	27	element type
2	5	element length
2	**Phototag**	*src*
2	**Phototag**	*lut*
10	**ProcessDomain**	*domain*
1	`CARD8`	*band-mask*
1		unused

Unconstrain

# of Bytes	Value	Description
2	28	element type
2	2	element length
2	**Phototag**	*src*
2		unused

Export Elements

ExportClientHistogram

# of Bytes	Value	Description
2	29	element type
2	5	element length
2	**Phototag**	*src*
1	**ExportNotify**	*notify*
1		unused
10	**ProcessDomain**	*domain*
2		unused

ExportClientLUT

# of Bytes	Value	Description
2	30	element type
2	8	element length
2	**Phototag**	*src*
1	**ExportNotify**	*notify*
1	**Orientation**	*band-order*
12	**Tripletof**`CARD32`	*start*
12	**Tripletof**`CARD32`	*length*

ExportClientPhoto

# of Bytes	Value	Description
2	31	element type
2	3+n	element length
2	**Phototag**	*src*
1	**ExportNotify**	*notify*
1		unused
2	**EncodeTechnique**	*encode* (any except ***Encode_ServerChoice***)
2	n	length of *encode-params*
4n	<technique-dependent>	*encode-params*

ExportClientROI

# of Bytes	Value	Description
2	32	element type
2	2	element length
2	**Phototag**	*src*
1	**ExportNotify**	*notify*
1		unused

ExportDrawable

# of Bytes	Value	Description
2	33	element type
2	5	element length
2	**Phototag**	*src*
2	`INT16`	*dst-x*
2	`INT16`	*dst-y*
2		unused
4	`DRAWABLE`	*drawable*
4	`GCONTEXT`	*gc*

ExportDrawablePlane

# of Bytes	Value	Description
2	34	element type
2	5	element length
2	**Phototag**	*src*
2	INT16	*dst-x*
2	INT16	*dst-y*
2		unused
4	DRAWABLE	*drawable*
4	GCONTEXT	*gc*

ExportLUT

# of Bytes	Value	Description
2	35	element type
2	6	element length
2	**Phototag**	*src*
1	BOOL	*merge*
1		unused
4	**LUT**	*lut*
12	**Tripletof**CARD32	*start*

ExportPhotomap

# of Bytes	Value	Description
2	36	element type
2	4+n	element length
2	**Phototag**	*src*
2		unused
4	**Photomap**	*photomap*
2	**EncodeTechnique**	*encode*
2	n	length of *encode-params*
4n	<technique-dependent>	*encode-params*

ExportROI

# of Bytes	Value	Description
2	37	element type
2	3	element length
2	**Phototag**	*src*
2		unused
4	**ROI**	*roi*

Technique Parameters

ColorAlloc

Default

# of Bytes	Value	Description
0		<no parameters>

AllocAll

# of Bytes	Value	Description
4	`CARD32`	*fill*

Match

# of Bytes	Value	Description
4	**Float**	*match-limit*
4	**Float**	*gray-limit*

Requantize

# of Bytes	Value	Description
4	`CARD32`	max-cells

Constrain

ClipScale

# of Bytes	Value	Description
12	**Constant**	*input-low*
12	**Constant**	*input-high*
12	**Levels**	*output-low*
12	**Levels**	*output - high*

HardClip

# of Bytes	Value	Description
0		<no parameters>

ConvertFromRGB

CIELab

# of Bytes	Value	Description
36	**Matrix**	*matrix*
2	**WhiteAdjustTechnique**	*white-adjust*
2	w	length of *white-params*
4w	<technique-dependent>	*white-params*

CIEXYZ

# of Bytes	Value	Description
36	**Matrix**	*matrix*
2	**WhiteAdjustTechnique**	*white-adjust*
2	w	length of *white-params*
4w	<technique-dependent>	*white-params*

YCbCr

# of Bytes	Value	Description
12	**Levels**	*levels*
12	**Constant**	*luma* { red, green, blue }
12	**Constant**	*bias*

YCC

# of Bytes	Value	Description
12	**Levels**	*levels*
12	**Constant**	*luma* { red, green, blue }
4	**Float**	*scale*

ConvertToRGB

CIELab

# of Bytes	Value	Description
36	**Matrix**	*matrix*
2	**WhiteAdjustTechnique**	*white-adjust*
2	w	length of *white-params*
2	**GamutTechnique**	*gamut-compress*
2	g	length of *gamut-params*
4w	<technique-dependent>	*white-params*
4g	<technique-dependent>	*gamut-params*

CIEXYZ

# of Bytes	Value	Description
36	**Matrix**	*matrix*
2	**WhiteAdjustTechnique**	*white-adjust*
2	w	length of *white-params*
2	**GamutTechnique**	*gamut-compress*
2	g	length of *gamut-params*
4w	<technique-dependent>	*white-params*
4g	<technique-dependent>	*gamut-params*

YCbCr

# of Bytes	Value	Description
12	**Levels**	*levels*
12	**Constant**	*luma* { red, green, blue }
12	**Constant**	*bias*
2	**GamutTechnique**	*gamut-compress*
2	g	length of *gamut-params*
4g	<technique-dependent>	*gamut-params*

YCC

# of Bytes	Value	Description
12	**Levels**	*levels*
12	**Constant**	*luma* { red, green, blue }
4	**Float**	*scale*
2	**GamutTechnique**	*gamut-compress*
2	g	length of *gamut-params*
4g	<technique-dependent>	*gamut-params*

Convolve

Default

# of Bytes	Value	Description
0		<no parameters>

Constant

# of Bytes	Value	Description
12	**Constant**	*constant*

Replicate

# of Bytes	Value	Description
0		<no parameters>

Decode

UncompressedSingle

# of Bytes	Value	Description
1	**Orientation**	*fill-order*
1	**Orientation**	*pixel-order*
1	CARD8	*pixel-stride*
1	CARD8	*left-pad*
1	CARD8	*scanline-pad*
3		unused

UncompressedTriple

# of Bytes	Value	Description
3	**Tripletof**CARD8	*left-pad*
1	**Orientation**	*fill-order*
3	**Tripletof**CARD8	*pixel-stride*
1	**Orientation**	*pixel-order*
3	**Tripletof**CARD8	*scanline-pad*
1	**Orientation**	*band-order*
1	**Interleave**	*interleave*
3		unused

CITT-G31D

# of Bytes	Value	Description
1	**Orientation**	*encoded-order*
1	BOOL	*normal*
1	BOOL	*radiometric*
1		unused

CCITT-G32D

# of Bytes	Value	Description
1	**Orientation**	*encoded-order*
1	BOOL	*normal*
1	BOOL	*radiometric*
1		unused

CCITT-G42D

# of Bytes	Value	Description
1	**Orientation**	*encoded-order*
1	BOOL	*normal*
1	BOOL	*radiometric*
1		unused

JPEG-Baseline

# of Bytes	Value	Description
1	**Interleave**	*interleave*
1	**Orientation**	*band-order*
1	BOOL	*up-sample*
1		unused

JPEG-Lossless

# of Bytes	Value	Description
1	**Interleave**	*interleave*
1	**Orientation**	*band-order*
2		unused

TIFF-2

# of Bytes	Value	Description
1	**Orientation**	*encoded-order*
1	BOOL	*normal*
1	BOOL	*radiometric*
1		unused

TIFF-PackBits

# of Bytes	Value	Description
1	**Orientation**	*encoded-order*
1	BOOL	*normal*
2		unused

Dither

Default

# of Bytes	Value	Description
0		<no parameters>

ErrorDiffusion

# of Bytes	Value	Description
0		<no parameters>

Ordered

# of Bytes	Value	Description
1	CARD8	threshold-order
3		unused

Encode

ServerChoice

# of Bytes	Value	Description
1	CARD8	*preference*:
	0	***PreferDefault***
	1	***PreferSpace***
	2	***PreferTime***
3		unused

UncompressedSingle

# of Bytes	Value	Description
1	**Orientation**	*fill-order*
1	**Orientation**	*pixel-order*
1	CARD8	*pixel-stride*
1	CARD8	*scanline-pad*

UncompressedTriple

# of Bytes	Value	Description
3	**Tripletof**CARD8	*pixel-stride*
1	**Orientation**	*pixel-order*
3	**Tripletof**CARD8	*scanline-pad*
1	**Orientation**	*fill-order*
1	**Orientation**	*band-order*
1	**Interleave**	*interleave*
2		unused

CCITT-G31D

# of Bytes	Value	Description
1	**Orientation**	*encoded-order*
1	BOOL	*align-eol*
1	BOOL	*radiometric*
1		unused

CCITT-G32D

# of Bytes	Value	Description
1	**Orientation**	*encoded-order*
1	BOOL	*align-eol*
1	BOOL	*radiometric*
1	BOOL	*uncompressed*
4	CARD32	*k-factor*

CCITT-G42D

# of Bytes	Value	Description
1	**Orientation**	*encoded-order*
1	BOOL	*radiometric*
1	BOOL	*uncompressed*
1		unused

JPEG-Baseline

# of Bytes	Value	Description
1	**Interleave**	*interleave*
1	**Orientation**	*band-order*
3	**Tripletof**CARD8	*horizontal-samples*[0..2]
3	**Tripletof**CARD8	*vertical-samples*[0..2]
2	q	length of *q-table* (multiple of 4)
2	a	length of *ac-table* (multiple of 4)
2	d	length of *dc-table* (multiple of 4)
2		unused
q	LISTofCARD8	*q-table*
a	LISTofCARD8	*ac-table*
d	LISTofCARD8	*dc-table*

JPEG-Lossless

# of Bytes	Value	Description
1	**Interleave**	*interleave*
1	**Orientation**	*band-order*
2	t	length of *table* (multiple of 4)
3	**Tripletof**CARD8	*predictor*[0..2]:
	0	***PredictorNone***
	1	***PredictorA***
	2	***PredictorB***
	3	***PredictorC***
	4	***PredictorABC***
	5	***PredictorABC2***
	6	***PredictorBAC2***
	7	***PredictorAB2***
1		unused
t	LISTofCARD8	*table*

TIFF-2

# of Bytes	Value	Description
1	**Orientation**	encoded-order
1	BOOL	*radiometric*
2		unused

TIFF-PackBits

# of Bytes	Value	Description
1	**Orientation**	encoded-order
3		unused

Gamut

Default

# of Bytes	Value	Description
0		<no parameters>

None

# of Bytes	Value	Description
0		<no parameters>

ClipRGB

# of Bytes	Value	Description
0		<no parameters>

Geometry

Default

# of Bytes	Value	Description
0		<no parameters>

Antialias

# of Bytes	Value	Description
0		<no parameters>

AntialiasByArea

# of Bytes	Value	Description
2	INT16	*simple*
2		unused

AntialiasByLowpass

# of Bytes	Value	Description
2	INT16	*kernel-size*
2		unused

BilinearInterpolation

# of Bytes	Value	Description
0		<no parameters>

Gaussian

# of Bytes	Value	Description
1	CARD8	*radius*
1	BOOL	*simple*
2		unused
4	**Float**	*sigma*
4	**Float**	*normalize*

NearestNeighbor

# of Bytes	Value	Description
1	CARD8	*modify:*
	1	***FavorDown***
	2	***FavorUp***
	3	***RoundNW***
	4	***RoundNE***
	5	***RoundSE***
	6	***RoundSW***
3		unused

Histogram

Flat

# of Bytes	Value	Description
0		<no parameters>

Gaussian

# of Bytes	Value	Description
4	**Float**	*mean*
4	**Float**	*sigma*

Hyperbolic

# of Bytes	Value	Description
1	`BOOL`	*shape-factor*
3		unused
4	**Float**	*constant*

WhiteAdjust

Default

# of Bytes	Value	Description
0		<no parameters>

None

# of Bytes	Value	Description
0		<no parameters>

CIELabShift

# of Bytes	Value	Description
12	**Constant**	*white-point*

Events

ColorAlloc

# of Bytes	Value	Description
1	0	XIE event code: **ColorAlloc**
1		unused
2	CARD16	*sequence-number*
4	TIMESTAMP	*time*
8	**Executable**	*instance*
2	**Phototag**	*src*
2		*type*:
	18	**ConvertToIndex**
4	**ColorList**	*color-list*
2	**ColorAllocTechnique**	*color-alloc* technique
2		unused
4	CARD32	*color-alloc* specific *data*

DecodeNotify

# of Bytes	Value	Description
1	1	XIE event code: **DecodeNotify**
1	CARD8	*band-number*
2	CARD16	*sequence-number*
4	TIMESTAMP	*time*
8	**Executable**	*instance*
2	**Phototag**	*src*
2		*type:*
	2	**ImportClientPhoto**
	7	**ImportPhotomap**
2	**DecodeTechnique**	*decode* technique
1	BOOL	*aborted*
1		unused
4	CARD32	*data-width*
4	CARD32	*data-height*

ExportAvailable

# of Bytes	Value	Description
1	2	XIE event code: **ExportAvailable**
1	CARD8	*band-number*
2	CARD16	*sequence-number*
4	TIMESTAMP	*time*
8	**Executable**	*instance*
2	**Phototag**	*src*
2		*type:*
	29	**ExportClientHistogram**
	30	**ExportClientLUT**
	31	**ExportClientPhoto**
	32	**ExportClientROI**
12	**Tripletof**CARD32	*data*[0..2]

ImportObscured

# of Bytes	Value	Description
1	3	XIE event code: **ImportObscured**
1		unused
2	CARD16	*sequence-number*
4	TIMESTAMP	*time*
8	**Executable**	*instance*
2	**Phototag**	*src*
2		*type:*
	4	**ImportDrawable**
	5	**ImportDrawablePlane**
4	WINDOW	*window*
2	INT16	*x*
2	INT16	*y*
2	CARD16	*width*
2	CARD16	*height*

PhotofloDone

# of Bytes	Value	Description
1	4	XIE event code: **PhotofloDone**
1	**PhotofloOutcome**	*outcome*
2	CARD16	*sequence-number*
4	TIMESTAMP	*time*
8	**Executable**	*instance*
16		unused

Errors

ColorList

# of Bytes	Value	Description
1	0	Error
1	0	XIE error code: ***ColorList***
2	CARD16	*sequence-number*
4	**ColorList**	*color-list* id
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
21		unused

LUT

# of Bytes	Value	Description
1	0	Error
1	1	XIE error code: ***LUT***
2	CARD16	*sequence-number*
4	**LUT**	*lut* id
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
21		unused

Photoflo

# of Bytes	Value	Description
1	0	Error
1	2	XIE error code: ***Photoflo***
2	CARD16	*sequence-number*
4	**Photoflo**	*photoflo* id
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
21		unused

Photomap

# of Bytes	Value	Description
1	0	Error
1	3	XIE error code: ***Photomap***
2	CARD16	*sequence-number*
4	**Photomap**	*photomap* id
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
21		unused

Photospace

# of Bytes	Value	Description
1	0	Error
1	4	XIE error code: ***Photospace***
2	CARD16	*sequence-number*
4	**Photospace**	*photospace* id
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
21		unused

ROI

# of Bytes	Value	Description
1	0	Error
1	5	XIE error code: ***ROI***
2	CARD16	*sequence-number*
4	**ROI**	*roi* id
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
21		unused

FloAccess

# of Bytes	Value	Description
1	0	Error
1	6	XIE error code: ***Flo...***
2	CARD16	*sequence-number*
4	CARD32	executable *flo-id*
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
1	1	*flo-error-code*: ***FloAccess***
4	CARD32	executable *name-space*
2	**Phototag**	*phototag*
2	CARD16	*type*
12		unused

FloAlloc

# of Bytes	Value	Description
1	0	Error
1	6	XIE error code: ***Flo...***
2	CARD16	*sequence-number*
4	CARD32	executable *flo-id*
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
1	2	*flo-error-code*: ***FloAlloc***
4	CARD32	executable *name-space*
2	**Phototag**	*phototag*
2	CARD16	*type*
12		unused

FloColormap

# of Bytes	Value	Description
1	0	Error
1	6	XIE error code: ***Flo...***
2	CARD16	*sequence-number*
4	CARD32	executable *flo-id*
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
1	3	*flo-error-code*: ***FloColormap***
4	CARD32	executable *name-space*
2	**Phototag**	*phototag*
2	CARD16	*type*
4	COLORMAP	*colormap* id
8		unused

FloColorList

# of Bytes	Value	Description
1	0	Error
1	6	XIE error code: ***Flo...***
2	CARD16	*sequence-number*
4	CARD32	executable *flo-id*
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
1	4	*flo-error-code*: ***FloColorList***
4	CARD32	executable *name-space*
2	**Phototag**	*phototag*
2	CARD16	*type*
4	**ColorList**	*color-list* id
8		unused

FloDomain

# of Bytes	Value	Description
1	0	Error
1	6	XIE error code: ***Flo...***
2	CARD16	*sequence-number*
4	CARD32	executable *flo-id*
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
1	5	*flo-error-code*: ***FloDomain***
4	CARD32	executable *name-space*
2	**Phototag**	*phototag*
2	CARD16	*type*
2	**Phototag**	*domain* source
10		unused

FloDrawable

# of Bytes	Value	Description
1	0	Error
1	6	XIE error code: ***Flo...***
2	CARD16	*sequence-number*
4	CARD32	executable *flo-id*
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
1	6	*flo-error-code*: ***FloDrawable***
4	CARD32	executable *name-space*
2	**Phototag**	*phototag*
2	CARD16	*type*
4	DRAWABLE	*drawable* id
8		unused

FloElement

# of Bytes	Value	Description
1	0	Error
1	6	XIE error code: ***Flo...***
2	CARD16	*sequence-number*
4	CARD32	executable *flo-id*
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
1	7	*flo-error-code*: ***FloElement***
4	CARD32	executable *name-space*
2	**Phototag**	*phototag*
2	CARD16	*type*
12		unused

FloGC

# of Bytes	Value	Description
1	0	Error
1	6	XIE error code: ***Flo...***
2	CARD16	*sequence-number*
4	CARD32	executable *flo-id*
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
1	8	*flo-error-code*: ***FloGC***
4	CARD32	executable *name-space*
2	**Phototag**	*phototag*
2	CARD16	*type*
4	GCONTEXT	*gc* id
8		unused

FloID

# of Bytes	Value	Description
1	0	Error
1	6	XIE error code: ***Flo...***
2	CARD16	*sequence-number*
4	CARD32	executable *flo-id*
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
1	9	*flo-error-code*: ***FloID***
4	CARD32	executable *name-space*
16		unused

FloLength

# of Bytes	Value	Description
1	0	Error
1	6	XIE error code: ***Flo...***
2	CARD16	*sequence-number*
4	CARD32	executable *flo-id*
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
1	10	*flo-error-code*: ***FloLength***
4	CARD32	executable *name-space*
2	**Phototag**	*phototag*
2	CARD16	*type*
12		unused

FloLUT

# of Bytes	Value	Description
1	0	Error
1	6	XIE error code: ***Flo...***
2	CARD16	*sequence-number*
4	CARD32	executable *flo-id*
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
1	11	*flo-error-code*: ***FloLUT***
4	CARD32	executable *name-space*
2	**Phototag**	*phototag*
2	CARD16	*type*
4	**LUT**	*lut* id
8		unused

FloMatch

# of Bytes	Value	Description
1	0	Error
1	6	XIE error code: ***Flo...***
2	CARD16	*sequence-number*
4	CARD32	executable *flo-id*
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
1	12	*flo-error-code*: ***FloMatch***
4	CARD32	executable *name-space*
2	**Phototag**	*phototag*
2	CARD16	*type*
12		unused

FloOperator

# of Bytes	Value	Description
1	0	Error
1	6	XIE error code: ***Flo...***
2	CARD16	*sequence-number*
4	CARD32	executable *flo-id*
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
1	13	*flo-error-code*: ***FloOperator***
4	CARD32	executable *name-space*
2	**Phototag**	*phototag*
2	CARD16	*type*
1	CARD8	*operator*
11		unused

FloPhotomap

# of Bytes	Value	Description
1	0	Error
1	6	XIE error code: ***Flo...***
2	CARD16	*sequence-number*
4	CARD32	executable *flo-id*
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
1	14	*flo-error-code*: ***FloPhotomap***
4	CARD32	executable *name-space*
2	**Phototag**	*phototag*
2	CARD16	*type*
4	**Photomap**	*photomap* id
8		unused

FloROI

# of Bytes	Value	Description
1	0	Error
1	6	XIE error code: ***Flo...***
2	CARD16	*sequence-number*
4	CARD32	executable *flo-id*
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
1	15	*flo-error-code*: ***FloROI***
4	CARD32	executable *name-space*
2	**Phototag**	*phototag*
2	CARD16	*type*
4	**ROI**	*roi* id
8		unused

FloSource

# of Bytes	Value	Description
1	0	Error
1	6	XIE error code: ***Flo...***
2	CARD16	*sequence-number*
4	CARD32	executable *flo-id*
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
1	16	*flo-error-code*: ***FloSource***
4	CARD32	executable *name-space*
2	**Phototag**	*phototag*
2	CARD16	*type*
12		unused

FloTechnique

# of Bytes	Value	Description
1	0	Error
1	6	XIE error code: ***Flo...***
2	CARD16	*sequence-number*
4	CARD32	executable *flo-id*
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
1	17	*flo-error-code*: ***FloTechnique***
4	CARD32	executable *name-space*
2	**Phototag**	*phototag*
2	CARD16	*type*
2	CARD16	*technique-number*
2	CARD16	length of *tech-params* that were supplied
1	**TechniqueGroup**	*technique-group*
7		unused

FloValue

# of Bytes	Value	Description
1	0	Error
1	6	XIE error code: ***Flo...***
2	CARD16	*sequence-number*
4	CARD32	executable *flo-id*
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
1	18	*flo-error-code*: ***FloValue***
4	CARD32	executable *name-space*
2	**Phototag**	*phototag*
2	CARD16	*type*
4	<32-bits>	*bad-value*
8		unused

FloImplementation

# of Bytes	Value	Description
1	0	Error
1	6	XIE error code: ***Flo...***
2	CARD16	*sequence-number*
4	CARD32	executable *flo-id*
2	CARD16	*minor-opcode*
1	CARD8	*major-opcode*
1	19	*flo-error-code*: ***FloImplementation***
4	CARD32	executable *name-space*
2	**Phototag**	*phototag*
2	CARD16	*type*
12		unused