

IPEVOCameraKit Main Classes

ICCamera

- | - ICCameraAvFoundationCapable
- | | - ICUVCCamera
- | | - ICIPEVOCamera
- | | - ICCameraZiggiHDPlus
- | | - ICIPEVOCameraWithHID
- | | - ICCameraP2V
- | | - ICCameraP2VR
- | | - ICCameraVZ1
- | | - ICCameraZiggi
- | | - ICCameraZiggiHD
- | - ICCameraWireless

ICCamerasManager

ICCameraStreamProxy

ICCaptureSession

ICLiveStreamLayer

ICCamera

ICCamera is the root class of all camera classes, and it defines the basic control interfaces of all cameras. ICCamera and the subclasses derived from it should be obtained through ICCamerasManager, and should not be created directly.

Property

NSString * model

The long model name of the camera

NSString * shortModel

The short model name of the camera

NSString instanceName

The instance name of the camera

NSUInteger capabilities

The bit masks of the camera's capabilities

Possible values :

ICCameraCapabilityResolution	0x01	This camera can change resolution
ICCameraCapabilityExposure	0x02	This camera can adjust exposure value
ICCameraCapabilityAutoExposure	0x04	This camera can disable auto expousre
ICCameraCapabilityWhiteBalance	0x08	This camera can set white balance
ICCameraCapabilityManualFocus	0x10	This camera can conduct manual focus

NSArray * supportedResolutions

Return the supporting resolution. ICCameraWireless needs to obtain the list of supporting resolution through - (void) getSupportedResolutionsWithUsername:andPassword:completionHandler:failureHandler:;;

NSString * uuid

The uuid of this device

Function

Execution results of the following functions will return ICCameraCommandReturnValue, and the possible values are:

ICCameraCommandUnsupported	This command is not supported
ICCameraCommandSucceeded	Successful execution
ICCameraCommandFailed	Failed execution

Some of the following functions need to use ICCameraPropertyValue to specify the required type of the value.

ICCameraPropertyValueMaximum	Maximum value
ICCameraPropertyValueMinimum	Minimum value
ICCameraPropertyValueDefault	Default value
ICCameraPropertyValueCurrent	Current value

- (ICCameraCommandReturnValue) focus;

Camera initiates focus action

- (ICCameraCommandReturnValue) setBrightness:(SInt16) value;
- (ICCameraCommandReturnValue) getBrightness:(SInt16 *) value ofType:
(ICCameraPropertyValue) type;

Access brightness value of the video

- (ICCameraCommandReturnValue) setContrast:(SInt16) value;
- (ICCameraCommandReturnValue) getContrast:(SInt16 *) value ofType:
(ICCameraPropertyValue) type;

Access contrast value of the video

- (ICCameraCommandReturnValue) setGamma:(SInt16) value;
- (ICCameraCommandReturnValue) getGamma:(SInt16 *) value ofType:
(ICCameraPropertyValue) type;

Access gamma value of the video

- (ICCameraCommandReturnValue) setHue:(SInt16) value;
- (ICCameraCommandReturnValue) getHue:(SInt16 *) value ofType:
(ICCameraPropertyValue) type;

Access hue value of the video

- (ICCameraCommandReturnValue) setSaturation:(SInt16) value;

- (ICCameraCommandReturnValue) getSaturation:(SInt16 *) value ofType:
(ICCameraPropertyValueType) type;

Access saturation value of the video

- (ICCameraCommandReturnValue) setSharpness:(SInt16) value;
- (ICCameraCommandReturnValue) getSharpness:(SInt16 *) value ofType:
(ICCameraPropertyValueType) type;

Access sharpness value of the video

- (ICCameraCommandReturnValue) setWhiteBalance:(SInt16) value;
- (ICCameraCommandReturnValue) getWhiteBalance:(SInt16 *) value ofType:
(ICCameraPropertyValueType) type;

Access white balance value of the video

- (ICCameraCommandReturnValue) setAutoWhiteBalance:(SInt8) value;
- (ICCameraCommandReturnValue) getAutoWhiteBalance:(SInt8 *) value;

Access the video's auto white balance configuration

- (ICCameraCommandReturnValue) setFocus:(SInt16) value;
- (ICCameraCommandReturnValue) getFocus:(SInt16 *) value ofType:
(ICCameraPropertyValueType) type;

Access focus value of the camera

- (ICCameraCommandReturnValue) setAutoFocus:(SInt8) value;
- (ICCameraCommandReturnValue) getAutoFocus:(SInt8 *) value;

Access the camera's auto focus configuration. True: auto focus; False: manual focus

- (ICCameraCommandReturnValue) getAutoFocusMode:(ICCameraAutoFocusMode *) value;

Acquire the camera's auto focus configuration

ICCameraAutoFocusModeUnknown	Unknown
ICCameraAutoFocusModeOnce	Single auto focus
ICCameraAutoFocusModeContinuous	Continuous auto focus

- (ICCameraCommandReturnValue) setAutoExposure:(BOOL) value;
- (ICCameraCommandReturnValue) getAutoExposure:(BOOL *) value;

Access the auto exposure configuration

- (ICCameraCommandReturnValue) setExposure:(SInt16) value;

- (ICCCommandReturn) getExposure:(NSInteger *) value ofType:
(ICCPropertyValueType) type;

Access the camera's exposure value

- (ICCCommandReturn) setFrequency:(ICPowerlineFrequency) value;
- (ICCCommandReturn) getFrequency:(ICPowerlineFrequency *) value
ofType:(ICCPropertyValueType) type;

Access the configuration of camera powerline frequency

Notifications

The camera will send out corresponding notifications through NSNotificationCenter based on its triggered actions.

ICNotificationCameraSetToSingleFocus

Focus Mode of the camera is switched to single

ICNotificationCameraSetToContinueFocus

Focus Mode of the camera is switched to continuous

ICNotificationCameraDidPressSnapshot

The snapshot button on the camera is pressed

ICNotificationCameraDidBeginAutoFocus

The camera starts to focus

ICNotificationCameraDidEndAutoFocus

Camera focus completed

ICNotificationCameraDidCancelAutoFocus

Camera focus is cancelled

ICNotificationCameraPropertyDidChange

Property value of the camera is changed. The changed values will be passed along using the userinfo field of notification. The possible values are:

ICCameraPropertyKeyBrightness
ICCameraPropertyKeyContrast
ICCameraPropertyKeyGamma
ICCameraPropertyKeyHue

ICCcameraPropertyKeySaturation
ICCcameraPropertyKeySharpness
ICCcameraPropertyKeyExposure
ICCcameraPropertyKeyFocus
ICCcameraPropertyKeyAutoFocus
ICCcameraPropertyKeyResolution
ICCcameraPropertyKeyFrequency
ICCcameraPropertyKeyAutoWhiteBalance
ICCcameraPropertyKeyWhiteBalance
ICCcameraPropertyKeyAutoExposure

ICCcamerasManager

ICCcamerasManager controls the connection and removal configuration of the camera

Property

cameras

Return the list of cameras connected to the system

Function

+ (ICCcamerasManager *) sharedManager;

Return the shared ICCcamerasManager during execution

- (void) startMonitoring;

Start to monitor

In order to start monitoring the camera, it is normally suggested to add `[[ICCcamerasManager sharedManager] startMonitoring];` to the `- (void)applicationDidFinishLaunching:` function under Application Delegate.

Notifications

ICCcamerasManager will send notifications of the camera's connection and removal through the NotificationCenter. The camera's corresponding ICCcamera instance will be passed along using the `userInfo` field of the notification

ICNotificationCameraAttached

The camera is connected, and monitored by the ICCcamerasManager.

ICNotificationCameraDetached

The camera is removed.

ICCameraStreamProxy

ICCameraStreamProxy handles the camera's video stream capturing, and it passes received video frame to the observer.

Function

+ (instancetype) sharedProxy;

Return the shared ICCamerasStreamProxy during execution

- (void) addStreamObserver:(id<ICCameraStreamProxyDelegate>) observer forCamera:(ICCamera *) camera;

Register with ICCameraStreamProxy as the observer to acquire the camera's video frame

- (void) removeStreamObserver:(id) observer forCamera:(ICCamera *) camera;

Cancel registration as the observer on ICCameraStreamProxy

- (ICCaptureSession *) captureSessionForCamera:(ICCamera *) camera;

Obtain the camera's corresponding ICCaptureSession in ICCameraStreamProxy

ICCameraStreamProxyDelegate

Delegate object should implement this function to receive video frame from the camera

- (void) cameraStreamProxy:(ICCameraStreamProxy *) cameraStreamProxy didReceiveFrame:(CIImage *) image withInfo:(NSDictionary *) info fromCamera:(ICCamera *) camera;

Receive images from the camera

ICCaptureSession

ICCaptureSession captures the camera's video stream

Property

camera

The corresponding camera of this ICCaptureSession

delegate

The object which implemented ICCaptureSessionDelegate protocol.

isRunning

Indicate whether ICCaptureSession is capturing video or not

fps

Real time information of frame per second

Function

- (ICCaptureSession *) initWithCamera:(ICCamera *) camera;

Initialize ICCaptureSession used to capture the camera's video stream

- (void) startRunning;

Start capturing video stream

- (void) stopRunning;

Stop capturing video stream

- (CALayer *) displayLayer;

Return the layer that displays the video content

ICCaptureSessionDelegate

Delegate object should implement this function to receive video frame from the camera

```
- (void) captureSession:(ICCaptureSession *) captureSession  
didCaptureImage:(CImage *) image withInfo:(NSDictionary *) info;  
Receive images from the camera
```

ICLiveStreamLayer

Implement basic video layer control functions

Property

CGFloat contentHeightWidthRatio;

The actual Height/Width ratio of the content

Must manually assign for the content to be displayed properly

CGFloat contentRotationDegree;

Configure the content layer's angle of rotation

CGFloat contentZoomValue;

Configure the zoomed-in ratio of the content layer

BOOL horizontalFlipped;

Determine whether to mirror the video horizontally or not

BOOL verticalFlipped;

Determine whether to mirror the video vertically or not

CALayer * contentLayer;

Set the contentLayer. The default value is the displayLayer in ICCaptureSession.

CGPoint zoomedAreaPosition;

Determine the zoomed-in area's position

BOOL fillToBounds;

Determine whether to fill up the entire content layer or not

Function

-(instancetype) initWithSession:(ICCaptureSession *) captureSession;

Create ICLiveStreamLayer with ICCaptureSession