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Namespace Uralstech.UXR.QuestCamera

Classes

[CameraDevice](#)

A wrapper for a native Camera2 CameraDevice.

[CameraFrameForwarder](#)

Forwards frame callbacks from the native Kotlin plugin to Unity.

[CameraInfo](#)

Wrapper for Camera2's CameraCharacteristics.

[CameraSupport](#)

Utility to check if the current Meta Quest device supports the Passthrough Camera API.

[CaptureSessionObject<T>](#)

Simple class for grouping capture session related components to their GameObject.

[ContinuousCaptureSession](#)

A wrapper for a native Camera2 CaptureSession and ImageReader.

[OnDemandCaptureSession](#)

A wrapper for a native Camera2 CaptureSession and ImageReader.

[OnDemandSurfaceTextureCaptureSession](#)

On-demand version of [SurfaceTextureCaptureSession](#).

[SurfaceTextureCaptureSession](#)

This is an experimental capture session type that uses a native OpenGL texture to capture images for better performance.

[UCameraManager](#)

Class for interfacing with the native Camera2 API on Android.

[YUVToRGBAConverter](#)

The default YUV 4:2:0 to RGBA converter that uses a compute shader to convert the camera texture to RGBA.

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[CameraInfo.CameraIntrinsics](#)

Defines the camera's intrinsic properties. All values are in pixels.

[SurfaceTextureCaptureSession.TextureDeletionData](#)

Data structure to delete the native texture.

[SurfaceTextureCaptureSession.TextureSetupData](#)

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Enums

[CameraDevice.ErrorCode](#)

Error codes that can be returned by the native CameraDevice wrapper.

[CameraInfo.CameraEye](#)

The camera eye.

[CameraInfo.CameraSource](#)

The source of the camera feed.

[CaptureTemplate](#)

Capture template to use when recording.

[NativeWrapperState](#)

The current assumed state of a native wrapper.

Class CameraDevice

Namespace: [Uralstech.UXR.QuestCamera](#)

A wrapper for a native Camera2 CameraDevice.

```
public class CameraDevice : MonoBehaviour
```

Inheritance

object ← CameraDevice

Fields

OnDeviceClosed

Invoked when the CameraDevice is closed.

```
public UnityEvent OnDeviceClosed
```

Field Value

UnityEvent

OnDeviceDisconnected

Invoked when the CameraDevice is disconnected.

```
public UnityEvent OnDeviceDisconnected
```

Field Value

UnityEvent

OnDeviceErred

Invoked when the CameraDevice encounters an error.

```
public UnityEvent<CameraDevice.ErrorCode> OnDeviceErred
```

Field Value

UnityEvent<[ErrorCode](#)>

OnDeviceOpened

Invoked when the CameraDevice is opened.

```
public UnityEvent OnDeviceOpened
```

Field Value

UnityEvent

Properties

CameraId

The ID of the camera being wrapped.

```
public string CameraId { get; }
```

Property Value

string

CurrentState

The current assumed state of the native CameraDevice wrapper.

```
public NativeWrapperState CurrentState { get; }
```

Property Value

[NativeWrapperState](#)

IsActiveAndUsable

Is the native CameraDevice wrapper active and usable?

```
public bool IsActiveAndUsable { get; }
```

Property Value

bool

Methods

CreateContinuousCaptureSession(Resolution, CaptureTemplate)

Creates a new repeating/continuous capture session for use.

```
public CaptureSessionObject<ContinuousCaptureSession>  
CreateContinuousCaptureSession(Resolution resolution, CaptureTemplate captureTemplate  
= CaptureTemplate.Preview)
```

Parameters

resolution Resolution

The resolution of the capture.

captureTemplate [CaptureTemplate](#)

The capture template to use for the capture

Returns

[CaptureSessionObject](#)<[ContinuousCaptureSession](#)>

A new capture session wrapper. May be null if the current camera device is not usable.

Remarks

Once you have finished using the capture session, call [Destroy\(\)](#) to close the session and free up native and compute shader resources.

CreateOnDemandCaptureSession(Resolution)

Creates a new on-demand capture session for use.

```
public CaptureSessionObject<OnDemandCaptureSession> CreateOnDemandCaptureSession(Resolution resolution)
```

Parameters

resolution Resolution

The resolution of the capture.

Returns

[CaptureSessionObject](#)<[OnDemandCaptureSession](#)>

A new capture session wrapper. May be null if the current camera device is not usable.

Remarks

Once you have finished using the capture session, call [Destroy\(\)](#) to close the session and free up native and compute shader resources.

CreateOnDemandSurfaceTextureCaptureSession(Resolution, CaptureTemplate)

Creates a new on-demand OpenGL SurfaceTexture based capture session for use. Equivalent to [OnDemandCaptureSession](#).

```
public OnDemandSurfaceTextureCaptureSession  
CreateOnDemandSurfaceTextureCaptureSession(Resolution resolution, CaptureTemplate  
captureTemplate = CaptureTemplate.Preview)
```

Parameters

resolution Resolution

The resolution of the capture.

captureTemplate [CaptureTemplate](#)

The capture template to use for the capture

Returns

[OnDemandSurfaceTextureCaptureSession](#)

A new capture session wrapper. May be null if the current camera device is not usable.

Remarks

This is an experimental capture session type that uses a native OpenGL texture to capture images for better performance.

The results of this capture session may be more noisy compared to [OnDemandCaptureSession](#). Requires OpenGL ES 3.0 or higher as the project's Graphics API. Works with single and multi-threaded rendering.

CreateSurfaceTextureCaptureSession(Resolution, CaptureTemplate)

Creates a new OpenGL SurfaceTexture based capture session for use. Equivalent to [ContinuousCaptureSession](#).

```
public SurfaceTextureCaptureSession CreateSurfaceTextureCaptureSession(Resolution  
resolution, CaptureTemplate captureTemplate = CaptureTemplate.Preview)
```

Parameters

resolution Resolution

The resolution of the capture.

captureTemplate [CaptureTemplate](#)

The capture template to use for the capture

Returns

[SurfaceTextureCaptureSession](#)

A new capture session wrapper. May be null if the current camera device is not usable.

Remarks

This is an experimental capture session type that uses a native OpenGL texture to capture images for better performance.

The results of this capture session may be more noisy compared to [ContinuousCaptureSession](#). Requires OpenGL ES 3.0 or higher as the project's Graphics API. Works with single and multi-threaded rendering.

Destroy()

Releases the CameraDevice's native resources, and destroys its GameObject.

```
public void Destroy()
```

OnDestroy()

```
protected void OnDestroy()
```

Release()

Releases the CameraDevice's native resources, and makes it unusable.

```
public void Release()
```

WaitForInitialization()

Waits until the CameraDevice is open or erred out.

```
public IEnumerator WaitForInitialization()
```

Returns

IEnumerator

WaitForInitializationAsync()

Waits until the CameraDevice is open or erred out.

```
public Awaitable<NativeWrapperState> WaitForInitializationAsync()
```

Returns

Awaitable<[NativeWrapperState](#)>

The current state of the CameraDevice.

Remarks

Requires Unity 6.0 or higher.

_onDeviceClosed(string)

```
public void _onDeviceClosed(string _)
```

Parameters

 string

_onDeviceDisconnected(string)

```
public void _onDeviceDisconnected(string _)
```

Parameters

 string

_onDeviceErred(string)

```
public void _onDeviceErred(string errorCodeStr)
```

Parameters

errorCodeStr string

_onDeviceOpened(string)

```
public void _onDeviceOpened(string _)
```

Parameters

_ string

Enum CameraDevice.ErrorCode

Namespace: [Uralstech.UXR.QuestCamera](#)

Error codes that can be returned by the native CameraDevice wrapper.

```
public enum CameraDevice.ErrorCode
```

Fields

CameraAccessException = 1000

The native code encountered a CameraAccessException.

CameraDeviceError = 4

The camera device has encountered a fatal error.

CameraDisabled = 3

The camera device could not be opened due to a device policy.

CameraInUse = 1

The camera device is in use already.

CameraServiceError = 5

The camera service has encountered a fatal error.

MaxCamerasInUse = 2

The camera device could not be opened because there are too many other open camera devices.

SecurityException = 1001

The native code encountered a SecurityException.

Unknown = 0

Unknown error.

Class CameraFrameForwarder

Namespace: [Uralstech.UXR.QuestCamera](#)

Forwards frame callbacks from the native Kotlin plugin to Unity.

```
public class CameraFrameForwarder : AndroidJavaProxy
```

Inheritance

object ← CameraFrameForwarder

Constructors

CameraFrameForwarder()

```
public CameraFrameForwarder()
```

Fields

OnFrameReady

Callback for processing the YUV 4:2:0 frame.

```
public Func<nint, nint, nint, int, int, int, int, int, int, long, Task> OnFrameReady
```

Field Value

Func<nint, nint, nint, int, int, int, int, int, int, long, Task>

Remarks

Parameters	
yBuffer (IntPtr)	Pointer to the buffer containing Y (luminance) data of the frame.
uBuffer (IntPtr)	Pointer to the buffer containing U (color) data of the frame.

Parameters	
vBuffer (IntPtr)	Pointer to the buffer containing V (color) data of the frame.
ySize (int)	The size of yBuffer.
uSize (int)	The size of uBuffer.
vSize (int)	The size of vBuffer.
yRowStride (int)	The size of each row of the image in yBuffer in bytes.
uvRowStride (int)	The size of each row of the image in uBuffer and vBuffer in bytes.
uvPixelStride (int)	The size of a pixel in a row of the image in uBuffer and vBuffer in bytes.
timestamp (long)	The timestamp the frame was captured at in nanoseconds.

Methods

Invoke(string, nint)

```
public override nint Invoke(string methodName, nint javaArgs)
```

Parameters

methodName string

javaArgs nint

Returns

nint

Class CameraInfo

Namespace: [Uralstech.UXR.QuestCamera](#)

Wrapper for Camera2's CameraCharacteristics.

```
public class CameraInfo
```

Inheritance

object ← CameraInfo

Constructors

CameraInfo(AndroidJavaObject)

```
public CameraInfo(AndroidJavaObject cameraInfo)
```

Parameters

cameraInfo AndroidJavaObject

Properties

CameraId

The actual device ID of this camera.

```
public string CameraId { get; }
```

Property Value

string

Eye

(Meta Quest) The eye which the camera is closest to.

```
public CameraInfo.CameraEye Eye { get; }
```

Property Value

[CameraInfo.CameraEye](#)

Intrinsics

The intrinsics for this camera.

```
public CameraInfo.CameraIntrinsics Intrinsics { get; }
```

Property Value

[CameraInfo.CameraIntrinsics](#)

LensPoseRotation

The orientation of the camera relative to the sensor coordinate system.

```
public Quaternion LensPoseRotation { get; }
```

Property Value

Quaternion

LensPoseTranslation

The position of the camera optical center.

```
public Vector3 LensPoseTranslation { get; }
```

Property Value

Vector3

NativeCameraCharacteristics

The native CameraCharacteristics object.

```
public AndroidJavaObject NativeCameraCharacteristics { get; }
```

Property Value

AndroidJavaObject

Source

(Meta Quest) The source of the camera feed.

```
public CameraInfo.CameraSource Source { get; }
```

Property Value

[CameraInfo.CameraSource](#)

SupportedResolutions

The resolutions supported by this camera.

```
public Resolution[] SupportedResolutions { get; }
```

Property Value

Resolution[]

Methods

ToString()

Returns a string that represents the current object.

```
public override string ToString()
```

Returns

string

A string that represents the current object.

Operators

implicit operator string(CameraInfo)

```
public static implicit operator string(CameraInfo camera)
```

Parameters

camera [CameraInfo](#)

Returns

string

Enum CameraInfo.CameraEye

Namespace: [Uralstech.UXR.QuestCamera](#)

The camera eye.

```
public enum CameraInfo.CameraEye
```

Fields

Left = 1

The leftmost camera.

Right = 2

The rightmost camera.

Unknown = 0

Unknown.

Struct CameraInfo.CameraIntrinsics

Namespace: [Uralstech.UXR.QuestCamera](#)

Defines the camera's intrinsic properties. All values are in pixels.

```
public readonly struct CameraInfo.CameraIntrinsics
```

Constructors

CameraIntrinsics(Vector2, Vector2, Vector2, float)

```
public CameraIntrinsics(Vector2 resolution, Vector2 focalLength, Vector2 principalPoint, float skew)
```

Parameters

resolution Vector2

focalLength Vector2

principalPoint Vector2

skew float

Fields

FocalLength

Focal length in pixels.

```
public readonly Vector2 FocalLength
```

Field Value

Vector2

PrincipalPoint

Principal point in pixels from the image's top-left corner.

```
public readonly Vector2 PrincipalPoint
```

Field Value

Vector2

Resolution

Resolution in pixels.

```
public readonly Vector2 Resolution
```

Field Value

Vector2

Skew

Skew coefficient for axis misalignment.

```
public readonly float Skew
```

Field Value

float

Methods

ToString()

Returns the fully qualified type name of this instance.

```
public override string ToString()
```

Returns

string

The fully qualified type name.

Enum CameraInfo.CameraSource

Namespace: [Uralstech.UXR.QuestCamera](#)

The source of the camera feed.

```
public enum CameraInfo.CameraSource
```

Fields

PassthroughRGB = 1

Meta Quest Passthrough RGB cameras.

Unknown = 0

Unknown.

Class CameraSupport

Namespace: [Uralstech.UXR.QuestCamera](#)

Utility to check if the current Meta Quest device supports the Passthrough Camera API.

```
public static class CameraSupport
```

Inheritance

object ← CameraSupport

Remarks

Requires the Meta XR Core SDK.

Fields

MINSUPPORTOSVERSION

```
public const int MINSUPPORTOSVERSION = 74
```

Field Value

int

Properties

HorizonOSVersion

Get the Horizon OS version number on the headset

```
public static int? HorizonOSVersion { get; }
```

Property Value

int?

Remarks

Requires the Meta XR Core SDK.

IsSupported

Returns true if the current headset supports Passthrough Camera API

```
public static bool IsSupported { get; }
```

Property Value

bool

Remarks

Requires the Meta XR Core SDK.

Class CaptureSessionObject<T>

Namespace: [Uralstech.UXR.QuestCamera](#)

Simple class for grouping capture session related components to their GameObject.

```
public class CaptureSessionObject<T> where T : ContinuousCaptureSession
```

Type Parameters

T

Inheritance

object ← CaptureSessionObject<T>

Fields

CameraFrameForwarder

The camera frame forwarder.

```
public readonly CameraFrameForwarder CameraFrameForwarder
```

Field Value

[CameraFrameForwarder](#)

Remarks

You can add additional [YUVToRGBAConverter](#)s to this to have multiple streams of the same capture session.

CaptureSession

The capture session wrapper.

```
public readonly T CaptureSession
```

Field Value

T

GameObject

The GameObject containing the [CaptureSession](#) and [TextureConverter](#) components.

```
public readonly GameObject GameObject
```

Field Value

GameObject

TextureConverter

The YUV to RGBA texture converter.

```
public readonly YUVToRGBAConverter TextureConverter
```

Field Value

[YUVToRGBAConverter](#)

Methods

Destroy()

Destroys the GameObject to release all native resources.

```
public void Destroy()
```

Enum CaptureTemplate

Namespace: [Uralstech.UXR.QuestCamera](#)

Capture template to use when recording.

```
public enum CaptureTemplate
```

Fields

Default = 0

Default value, do not use.

Preview = 1

Creates a request suitable for a camera preview window.

Record = 3

Creates a request suitable for video recording.

StillCapture = 2

Creates a request suitable for still image capture.

VideoSnapshot = 4

Creates a request suitable for still image capture while recording video.

ZeroShutterLag = 5

Creates a request suitable for zero shutter lag still capture.

Class ContinuousCaptureSession

Namespace: [Uralstech.UXR.QuestCamera](#)

A wrapper for a native Camera2 CaptureSession and ImageReader.

```
public class ContinuousCaptureSession : MonoBehaviour
```

Inheritance

object ← ContinuousCaptureSession

Derived

[OnDemandCaptureSession](#), [SurfaceTextureCaptureSession](#)

Remarks

This is different from [OnDemandCaptureSession](#) as it returns a continuous stream of images.

Fields

OnSessionConfigurationFailed

Called when the session could not be configured.

```
public UnityEvent<string> OnSessionConfigurationFailed
```

Field Value

UnityEvent<string>

OnSessionConfigured

Called when the session has been configured.

```
public UnityEvent OnSessionConfigured
```

Field Value

UnityEvent

OnSessionRequestFailed

Called when the session request could not be set.

```
public UnityEvent<string> OnSessionRequestFailed
```

Field Value

UnityEvent<string>

OnSessionRequestSet

Called when the session request has been set.

```
public UnityEvent OnSessionRequestSet
```

Field Value

UnityEvent

_captureSession

The native capture session object.

```
protected AndroidJavaObject _captureSession
```

Field Value

AndroidJavaObject

Properties

CurrentState

The current assumed state of the native CaptureSession wrapper.

```
public NativeWrapperState CurrentState { get; }
```

Property Value

[NativeWrapperState](#)

IsActiveAndUsable

Is the native CaptureSession wrapper active and usable?

```
public bool IsActiveAndUsable { get; }
```

Property Value

bool

Methods

OnDestroy()

```
protected virtual void OnDestroy()
```

Release()

Releases the CaptureSession's native resources, and makes it unusable.

```
public void Release()
```

WaitForInitialization()

Waits until the CaptureSession is open or erred out.

```
public IEnumerator WaitForInitialization()
```

Returns

IEnumerator

WaitForInitializationAsync()

Waits until the CaptureSession is open or erred out.

```
public Awaitable<NativeWrapperState> WaitForInitializationAsync()
```

Returns

Awaitable<[NativeWrapperState](#)>

The current state of the CaptureSession.

Remarks

Requires Unity 6.0 or higher.

_onSessionConfigurationFailed(string)

```
public void _onSessionConfigurationFailed(string reason)
```

Parameters

reason string

_onSessionConfigured(string)

```
public void _onSessionConfigured(string _)
```

Parameters

`_` string

`_onSessionRequestFailed(string)`

```
public void _onSessionRequestFailed(string reason)
```

Parameters

`reason` string

`_onSessionRequestSet(string)`

```
public void _onSessionRequestSet(string _)
```

Parameters

`_` string

Enum NativeWrapperState

Namespace: [Uralstech.UXR.QuestCamera](#)

The current assumed state of a native wrapper.

```
public enum NativeWrapperState
```

Fields

Closed = 2

The native wrapper failed with an error, was disconnected or was closed normally.

Initializing = 0

The native wrapper is still initializing.

Opened = 1

The native wrapper is open and ready.

Class OnDemandCaptureSession

Namespace: [Uralstech.UXR.QuestCamera](#)

A wrapper for a native Camera2 CaptureSession and ImageReader.

```
public class OnDemandCaptureSession : ContinuousCaptureSession
```

Inheritance

object ← [ContinuousCaptureSession](#) ← OnDemandCaptureSession

Inherited Members

[ContinuousCaptureSession.CurrentState](#) , [ContinuousCaptureSession.IsActiveAndUsable](#) ,
[ContinuousCaptureSession.OnSessionConfigured](#) ,
[ContinuousCaptureSession.OnSessionConfigurationFailed](#) ,
[ContinuousCaptureSession.OnSessionRequestSet](#) , [ContinuousCaptureSession.OnSessionRequestFailed](#) ,
[ContinuousCaptureSession.captureSession](#) , [ContinuousCaptureSession.OnDestroy\(\)](#) ,
[ContinuousCaptureSession.WaitForInitialization\(\)](#) ,
[ContinuousCaptureSession.WaitForInitializationAsync\(\)](#) , [ContinuousCaptureSession.Release\(\)](#) ,
[ContinuousCaptureSession.onSessionConfigured\(string\)](#) ,
[ContinuousCaptureSession.onSessionConfigurationFailed\(string\)](#) ,
[ContinuousCaptureSession.onSessionRequestSet\(string\)](#) ,
[ContinuousCaptureSession.onSessionRequestFailed\(string\)](#).

Remarks

This is different from [ContinuousCaptureSession](#) as it only returns a frame from the native plugin when required. This is recommended for single-image capturing or on-demand capturing where you don't need a continuous stream of images.

Why does [OnDemandCaptureSession](#) inherit from [ContinuousCaptureSession](#)? Because under the hood, both do the same thing - a repeating capture session. A true on-demand capture results in a black image, so [OnDemandCaptureSession](#) runs a repeating capture request running on a dummy texture natively, and reads the actual image through an ImageReader only when requested to do so. This means that while the [ContinuousCaptureSession](#) processes each and every frame sent to it, converting it to RGBA, [OnDemandCaptureSession](#) only does it when required.

Methods

RequestCapture(CaptureTemplate)

Requests a new capture from the session.

```
public bool RequestCapture(CaptureTemplate captureTemplate = CaptureTemplate.StillCapture)
```

Parameters

captureTemplate [CaptureTemplate](#)

The capture template to use for the capture

Returns

bool

If the capture request was set successfully, [true](#)[↗], otherwise, [false](#)[↗].

Class OnDemandSurfaceTextureCaptureSession

Namespace: [Uralstech.UXR.QuestCamera](#)

On-demand version of [SurfaceTextureCaptureSession](#).

```
public class OnDemandSurfaceTextureCaptureSession : SurfaceTextureCaptureSession
```

Inheritance

object ← [ContinuousCaptureSession](#) ← [SurfaceTextureCaptureSession](#) ←

OnDemandSurfaceTextureCaptureSession

Inherited Members

[SurfaceTextureCaptureSession.CreateGLTextureEvent](#) ,
[SurfaceTextureCaptureSession.DestroyGLTextureEvent](#) ,
[SurfaceTextureCaptureSession.UpdateSurfaceTextureEvent](#) ,
[SurfaceTextureCaptureSession.GetRenderEventFunction\(\)](#) ,
[SurfaceTextureCaptureSession.s_nativeTextureCallbacks](#) ,
[SurfaceTextureCaptureSession.NativeTextureCallback\(\)](#) , [SurfaceTextureCaptureSession.Resolution](#) ,
[SurfaceTextureCaptureSession.Texture](#) , [SurfaceTextureCaptureSession.commandBuffer](#) ,
[SurfaceTextureCaptureSession.Awake\(\)](#) , [SurfaceTextureCaptureSession.OnDestroy\(\)](#) ,
[SurfaceTextureCaptureSession.CallNativeEvent<T>\(T, int, Action\)](#) ,
[SurfaceTextureCaptureSession._destroyNativeTexture\(string\)](#) , [ContinuousCaptureSession.CurrentState](#) ,
[ContinuousCaptureSession.IsActiveAndUsable](#) , [ContinuousCaptureSession.OnSessionConfigured](#) ,
[ContinuousCaptureSession.OnSessionConfigurationFailed](#) ,
[ContinuousCaptureSession.OnSessionRequestSet](#) , [ContinuousCaptureSession.OnSessionRequestFailed](#) ,
[ContinuousCaptureSession._captureSession](#) , [ContinuousCaptureSession.WaitForInitialization\(\)](#) ,
[ContinuousCaptureSession.WaitForInitializationAsync\(\)](#) , [ContinuousCaptureSession.Release\(\)](#) ,
[ContinuousCaptureSession._onSessionConfigured\(string\)](#) ,
[ContinuousCaptureSession._onSessionConfigurationFailed\(string\)](#) ,
[ContinuousCaptureSession._onSessionRequestSet\(string\)](#) ,
[ContinuousCaptureSession._onSessionRequestFailed\(string\)](#) .

Remarks

The results of this capture session may be more noisy compared to [OnDemandCaptureSession](#). Requires OpenGL ES 3.0 or higher as the project's Graphics API. Works with single and multi-threaded rendering.

Methods

RequestCapture()

Updates the texture with the latest image from the camera.

```
public IEnumerator RequestCapture()
```

Returns

IEnumerator

RequestCapture(Action<Texture2D>)

Updates the texture with the latest image from the camera.

```
public void RequestCapture(Action<Texture2D> onDone)
```

Parameters

onDone Action<Texture2D>

Callback for when the operation is completed.

RequestCaptureAsync()

Updates the texture with the latest image from the camera.

```
public Awaitable<Texture2D> RequestCaptureAsync()
```

Returns

Awaitable<Texture2D>

The updated texture.

_onCaptureCompleted(string)

```
public override void _onCaptureCompleted(string textureId)
```

Parameters

textureId string

Class SurfaceTextureCaptureSession

Namespace: [Uralstech.UXR.QuestCamera](#)

This is an experimental capture session type that uses a native OpenGL texture to capture images for better performance.

```
public class SurfaceTextureCaptureSession : ContinuousCaptureSession
```

Inheritance

object ← [ContinuousCaptureSession](#) ← SurfaceTextureCaptureSession

Derived

[OnDemandSurfaceTextureCaptureSession](#)

Inherited Members

[ContinuousCaptureSession.CurrentState](#) , [ContinuousCaptureSession.IsActiveAndUsable](#) ,
[ContinuousCaptureSession.OnSessionConfigured](#) ,
[ContinuousCaptureSession.OnSessionConfigurationFailed](#) ,
[ContinuousCaptureSession.OnSessionRequestSet](#) , [ContinuousCaptureSession.OnSessionRequestFailed](#) ,
[ContinuousCaptureSession.captureSession](#) , [ContinuousCaptureSession.WaitForInitialization\(\)](#) ,
[ContinuousCaptureSession.WaitForInitializationAsync\(\)](#) , [ContinuousCaptureSession.Release\(\)](#) ,
[ContinuousCaptureSession.onSessionConfigured\(string\)](#) ,
[ContinuousCaptureSession.onSessionConfigurationFailed\(string\)](#) ,
[ContinuousCaptureSession.onSessionRequestSet\(string\)](#) ,
[ContinuousCaptureSession.onSessionRequestFailed\(string\)](#).

Remarks

The results of this capture session may be more noisy compared to [ContinuousCaptureSession](#). Requires OpenGL ES 3.0 or higher as the project's Graphics API. Works with single and multi-threaded rendering.

Fields

CreateGLTextureEvent

Native event to create the native texture.

```
protected const int CreateGLTextureEvent = 1
```


Field Value

int

DestroyGLTextureEvent

Native event to destroy the native texture.

```
protected const int DestroyGLTextureEvent = 2
```

Field Value

int

UpdateSurfaceTextureEvent

Native event to update the native texture and convert it to the Unity texture.

```
protected const int UpdateSurfaceTextureEvent = 3
```

Field Value

int

_commandBuffer

The command buffer to issue native events.

```
protected CommandBuffer _commandBuffer
```

Field Value

CommandBuffer

s_nativeTextureCallbacks

Queue for native event callbacks.

```
protected static readonly ConcurrentQueue<Action> s_nativeTextureCallbacks
```

Field Value

ConcurrentQueue<Action>

Properties

Resolution

The resolution of this capture session.

```
public Resolution Resolution { get; }
```

Property Value

Resolution

Texture

The texture that will be updated with the camera feed.

```
public Texture2D Texture { get; }
```

Property Value

Texture2D

Methods

Awake()

```
protected void Awake()
```

CallNativeEvent<T>(T, int, Action)

Sends an event to the native plugin.

```
protected virtual void CallNativeEvent<T>(T data, int eventId, Action additionalAction = null) where T : struct
```

Parameters

data T

The data to send.

eventId int

The unique ID of the event.

additionalAction Action

Any additional action to be done after the event is completed.

Type Parameters

T

The type of the data to send.

GetRenderEventFunction()

Gets the pointer to the native rendering function.

```
protected static extern nint GetRenderEventFunction()
```

Returns

nint

NativeTextureCallback()

Callback for the native texture events. It will dequeue from [s_nativeTextureCallbacks](#) and call it.

```
protected static void NativeTextureCallback()
```

OnDestroy()

```
protected override void OnDestroy()
```

_destroyNativeTexture(string)

```
public virtual void _destroyNativeTexture(string textureId)
```

Parameters

textureId string

_onCaptureCompleted(string)

```
public virtual void _onCaptureCompleted(string textureId)
```

Parameters

textureId string

Struct

SurfaceTextureCaptureSession.TextureDeletionData

Namespace: [Uralstech.UXR.QuestCamera](#)

Data structure to delete the native texture.

```
protected struct SurfaceTextureCaptureSession.TextureDeletionData
```

Fields

OnDoneCallback

The callback to call when the deletion is done.

```
public nint OnDoneCallback
```

Field Value

nint

TextureId

The ID of the native texture.

```
public uint TextureId
```

Field Value

uint

Struct SurfaceTextureCaptureSession.TextureSetupData

Namespace: [Uralstech.UXR.QuestCamera](#)

Data structure to setup the native texture.

```
protected struct SurfaceTextureCaptureSession.TextureSetupData
```

Fields

Height

The height of the texture.

```
public int Height
```

Field Value

int

OnDoneCallback

The callback to call when the setup is done.

```
public nint OnDoneCallback
```

Field Value

nint

TimeStamp

The time when this capture session was created.

```
public long TimeStamp
```

Field Value

long

UnityTextureId

The Unity texture that the native texture will convert to.

```
public uint UnityTextureId
```

Field Value

uint

Width

The width of the texture.

```
public int Width
```

Field Value

int

Struct SurfaceTextureCaptureSession.TextureUpdateData

Namespace: [Uralstech.UXR.QuestCamera](#)

Data structure to update the native and Unity textures.

```
protected struct SurfaceTextureCaptureSession.TextureUpdateData
```

Fields

CameraTextureId

The ID of the native texture.

```
public int CameraTextureId
```

Field Value

int

OnDoneCallback

The callback to call when the update is done.

```
public nint OnDoneCallback
```

Field Value

nint

Class UCameraManager

Namespace: [Uralstech.UXR.QuestCamera](#)

Class for interfacing with the native Camera2 API on Android.

```
public class UCameraManager : DontCreateNewSingleton<UCameraManager>
```

Inheritance

object ← UCameraManager

Fields

AvatarCameraPermission

The permission required to access the Meta Quest Avatar Camera.

```
public const string AvatarCameraPermission = "android.permission.CAMERA"
```

Field Value

string

HeadsetCameraPermission

The permission required to access the Meta Quest's cameras.

```
public const string HeadsetCameraPermission = "horizonos.permission.HEADSET_CAMERA"
```

Field Value

string

YUVToRGBAComputeShader

The compute shader to use to convert the camera's YUV 4:2:0 images to RGBA.

```
public ComputeShader YUVToRGBAComputeShader
```

Field Value

ComputeShader

Properties

Cameras

Returns all available cameras and their characteristics. This is a cached value.

```
public CameraInfo[] Cameras { get; }
```

Property Value

[CameraInfo\[\]](#)

Methods

Awake()

```
protected override void Awake()
```

GetCamera(CameraEye)

Gets a camera device by the eye it is closest to.

```
public CameraInfo GetCamera(CameraInfo.CameraEye eye)
```

Parameters

eye [CameraInfo.CameraEye](#)

The eye.

Returns

[CameraInfo](#)

The camera's [CameraInfo](#), [null](#)  if not found.

OnDestroy()

```
protected void OnDestroy()
```

OpenCamera(string)

Opens a camera device for use.

```
public CameraDevice OpenCamera(string camera)
```

Parameters

camera string

The ID of the camera. You can get it from [Cameras](#) or [GetCamera\(CameraEye\)](#).

Returns

[CameraDevice](#)

A new camera device wrapper. May be null if the current object is disposed/unusable.

Remarks

Once you have finished using the camera, either destroy its GameObject or call [Release\(\)](#) to close the camera and free up native resources.

Class YUVToRGBAConverter

Namespace: [Uralstech.UXR.QuestCamera](#)

The default YUV 4:2:0 to RGBA converter that uses a compute shader to convert the camera texture to RGBA.

```
public class YUVToRGBAConverter : MonoBehaviour
```

Inheritance

object ← YUVToRGBAConverter

Fields

OnFrameProcessed

Called when a frame has been converted from YUV 4:2:0 to RGBA.

```
public UnityEvent<RenderTexture> OnFrameProcessed
```

Field Value

UnityEvent<RenderTexture>

OnFrameProcessedWithTimestamp

Called when a frame has been converted from YUV 4:2:0 to RGBA. Also includes the timestamp the frame was captured at in nanoseconds.

```
public UnityEvent<RenderTexture, long> OnFrameProcessedWithTimestamp
```

Field Value

UnityEvent<RenderTexture, long>

Shader

The shader used to convert YUV 4:2:0 to an RGBA RenderTexture. Uses [YUVToRGBAComputeShader](#) if not specified here.

```
public ComputeShader Shader
```

Field Value

ComputeShader

_uComputeBuffer

Pointer to the buffer containing U (color) data of the frame being processed.

```
protected ComputeBuffer _uComputeBuffer
```

Field Value

ComputeBuffer

_vComputeBuffer

Pointer to the buffer containing V (color) data of the frame being processed.

```
protected ComputeBuffer _vComputeBuffer
```

Field Value

ComputeBuffer

_yComputeBuffer

Pointer to the buffer containing Y (luminance) data of the frame being processed.

```
protected ComputeBuffer _yComputeBuffer
```

Field Value

ComputeBuffer

Properties

CameraFrameForwarder

The native camera frame forwarder.

```
public CameraFrameForwarder CameraFrameForwarder { get; protected set; }
```

Property Value

[CameraFrameForwarder](#)

FrameCaptureTimestamp

The timestamp the last frame processed was captured at in nanoseconds.

```
public long FrameCaptureTimestamp { get; protected set; }
```

Property Value

long

FrameRenderTexture

The RenderTexture which will contain the RGBA camera frames.

```
public RenderTexture FrameRenderTexture { get; protected set; }
```

Property Value

RenderTexture

_isReleased

Have the converter's resources been released?

```
protected bool _isReleased { get; }
```

Property Value

bool

Methods

Awake()

```
protected void Awake()
```

CopyNativeDataToComputeBuffer(ref ComputeBuffer, nint, int)

Copies native (unmanaged) byte data to a compute buffer.

```
protected static void CopyNativeDataToComputeBuffer(ref ComputeBuffer computeBuffer, nint  
nativeBufferPtr, int nativeBufferSize)
```

Parameters

computeBuffer ComputeBuffer

The buffer to copy to.

nativeBufferPtr nint

The memory to copy from.

nativeBufferSize int

The number of bytes to copy.

OnDestroy()

```
protected void OnDestroy()
```

OnFrameReady(nint, nint, nint, int, int, int, int, int, int, long)

Callback for [CameraFrameForwarder](#).

```
protected virtual Task OnFrameReady(nint yBuffer, nint uBuffer, nint vBuffer, int ySize, int uSize, int vSize, int yRowStride, int uvRowStride, int uvPixelStride, long timestamp)
```

Parameters

yBuffer nint

Pointer to the buffer containing Y (luminance) data of the frame.

uBuffer nint

Pointer to the buffer containing U (color) data of the frame.

vBuffer nint

Pointer to the buffer containing V (color) data of the frame.

ySize int

The size of **yBuffer**.

uSize int

The size of **uBuffer**.

vSize int

The size of **vBuffer**.

yRowStride int

The size of each row of the image in **yBuffer** in bytes.

uvRowStride int

The size of each row of the image in `uBuffer` and `vBuffer` in bytes.

`uvPixelStride` int

The size of a pixel in a row of the image in `uBuffer` and `vBuffer` in bytes.

`timestamp` long

The timestamp the frame was captured at in nanoseconds.

Returns

Task

Release()

Releases the ComputeBuffers and RenderTextures associated with this converter.

```
public void Release()
```

SendFrameToComputeBuffer(int, int, int, long)

Sends the camera frame stored in the compute buffers to the compute shader and dispatches it.

```
protected virtual void SendFrameToComputeBuffer(int yRowStride, int uvRowStride, int uvPixelStride, long timestampNs)
```

Parameters

`yRowStride` int

The size of each row of the image in `_yComputeBuffer` in bytes.

`uvRowStride` int

The size of each row of the image in `_uComputeBuffer` and `_vComputeBuffer` in bytes.

`uvPixelStride` int

The size of a pixel in a row of the image in `_uComputeBuffer` and `_vComputeBuffer` in bytes.

timestampNs long

The timestamp the frame was captured at in nanoseconds.

SetupCameraFrameForwarder(CameraFrameForwarder, Resolution)

Sets the camera frame forwarder.

```
public virtual void SetupCameraFrameForwarder(CameraFrameForwarder cameraFrameForwarder,
Resolution textureResolution)
```

Parameters

cameraFrameForwarder [CameraFrameForwarder](#)

textureResolution Resolution