IMVideoDataSource Protocol Reference

Cocoa > Apple Applications

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IMVideoDataSource Protocol Reference

(informal protocol)

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Overview

`IMVideoDataSource` is an informal protocol that an `IMAVManager` data source must conform to in order to provide video data to iChat AV.

To provide video when the `CVPixelBuffer` representation is preferred, the data source must implement both the `getPixelBufferPixelFormat:` (page 6) and `renderIntoPixelBuffer:forTime:` (page 7) methods. Otherwise, to provide video when the `CVOpenGLBuffers` representation is preferred, the data source must implement both the `getOpenGLBufferContext:pixelFormat:` (page 6) and `renderIntoOpenGLBuffer:onScreen:forTime:` (page 7) methods.

Tasks

Providing Pixel Buffered Video

- `getPixelBufferPixelFormat:` (page 6)
  Returns the pixel buffer format.
- `renderIntoPixelBuffer:forTime:` (page 7)
  Provides data for the next video frame using pixel buffering.

Providing OpenGL Buffered Video

- `getOpenGLBufferContext:pixelFormat:` (page 6)
  Returns the pixel OpenGL buffer context and pixel format.
- `renderIntoOpenGLBuffer:onScreen:forTime:` (page 7)
  Provides data for the next video frame using OpenGL buffering.

Instance Methods

getOpenGLBufferContext:pixelFormat:

Returns the pixel OpenGL buffer context and pixel format.

```
- (void)getOpenGLBufferContext:(CGLContextObj *)contextOut
    pixelFormat:(CGLPixelFormatObj *)pixelFormatOut
```

Parameters

contextOut

The OpenGL context to be used for the `CVOpenGLBufferRef` instances passed to the `renderIntoOpenGLBuffer:onScreen:forTime:` method.

pixelFormatOut

The OpenGL pixel format to be used for the `CVOpenGLBufferRef` instances passed to the `renderIntoOpenGLBuffer:onScreen:forTime:` method.

Discussion

This method is invoked once after `setVideoDataSource:` is sent to an `IMAVManager` object.

Availability

Available in Mac OS X v10.5 and later.

See Also

`- renderIntoOpenGLBuffer:onScreen:forTime:` (page 7)

Declared In

`IMAVManager.h`

getPixelBufferPixelFormat:

Returns the pixel buffer format.

```
- (void)getPixelBufferPixelFormat:(OSType *)pixelFormatOut
```

Parameters

pixelFormatOut

The pixel format to be used for the `CVPixelBufferRef` instances passed to the `renderIntoPixelBuffer:forTime:` method.

Discussion

This method is invoked once after `setVideoDataSource:` is sent to an `IMAVManager` object.

Availability

Available in Mac OS X v10.5 and later.

See Also

`- renderIntoPixelBuffer:forTime:` (page 7)

Declared In

`IMAVManager.h`

renderIntoOpenGLBuffer:onScreen:forTime:

Provides data for the next video frame using OpenGL buffering.

```
- (BOOL)renderIntoOpenGLBuffer:(CVOpenGLBufferRef)buffer onScreen:(int *)screenInOut
    forTime:(CVTimeStamp *)timeStamp
```

Parameters

buffer

The OpenGL buffer to fill. The receiver should call the `CVOpenGLBufferAttach` function and then fill the buffer with video data.

screenInOut

The recommended virtual screen number to pass to the `CVOpenGLBufferAttach` function for maximum efficiency. The receiver may use a different screen number, but it must write that value back into *screenInOut* before returning.

timeStamp

The frame time for which the buffer should be rendered.

You should render a video frame that corresponds to the supplied host time, `timeStamp->hostTime`, and before returning from this method, change the host time to the earliest time for which the rendered video is valid. For example, if the content is a movie, then set the host time to correspond to the rendered frame—typically, slightly earlier than the original host time. If the content is a photo slideshow, then set the host time to the time the image first appeared which can be several seconds before the original host time. Adjusting the time this way helps synchronize the audio with the video track.

Return Value

Returns `YES` if the buffer is successfully filled with new frame data. Returns `NO` if nothing changed or an error was encountered.

Discussion

This method is invoked each time a frame is sent to iChat AV. This method is not invoked on the main thread.

Availability

Available in Mac OS X v10.5 and later.

See Also

`- getOpenGLBufferContext:pixelFormat:` (page 6)

Declared In

`IMAVManager.h`

renderIntoPixelBuffer:forTime:

Provides data for the next video frame using pixel buffering.

```
- (BOOL)renderIntoPixelBuffer:(CVPixelBufferRef)buffer forTime:(CVTimeStamp
    *)timeStamp
```

Parameters

buffer

The pixel buffer to fill with video data. The dimensions can vary. Use the `CVPixelBufferGetWidth` and `CVPixelBufferGetHeight` functions to get the dimensions each time this method is invoked.

timeStamp

The frame time for which the buffer should be rendered.

You should render a video frame that corresponds to the supplied host time, `timeStamp->hostTime`, and before returning from this method, change the host time to the earliest time for which the rendered video is valid. For example, if the content is a movie, then set the host time to correspond to the rendered frame—typically, slightly earlier than the original host time. If the content is a photo slideshow, then set the host time to the time the image first appeared which can be several seconds before the original host time. Adjusting the time this way helps synchronize the audio with the video track.

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Availability

Available in Mac OS X v10.5 and later.

See Also

`- getPixelBufferPixelFormat:` (page 6)

Declared In

`IMAVManager.h`

Document Revision History

This table describes the changes to *IMVideoDataSource Protocol Reference*.

Date	Notes
2007-07-08	New document that describes the informal protocol of an IMAVManager data source object--describes the methods you implement to supply audio and/or video to iChat AV.

Document Revision History

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