Kinect SDK Reference

Microsoft
Developer Network

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Kinect SDK Reference

WindowsPreview.Kinect Namespace

Contains the types and members in the WindowsPreview.Kinect namespace.

Classes

Name	Description
AudioBeam	Represents an audio beam.
AudioBeamFrame	Represents an audio beam frame.
AudioBeamFrameArrivedEventArgs	Arguments for the audio related FrameReady events.
AudioBeamFrameList	Represents a list of audio beam frames.
AudioBeamFrameReader	Represents an audio beam frame reader.
AudioBeamFrameReference	Represents an audio frame reference.
AudioBeamSubFrame	Represents an audio beam sub frame.
AudioBodyCorrelation	Represents a correlation between an audio frame and a unique body tracking id.
AudioSource	Represents an audio frame source.

Body	Represents a body.
BodyFrame	Represents a frame that contains all the computed real-time tracking information about people that are in view of the sensor.
BodyFrameArrivedEventArgs	Represents the arguments for a body frame reader's FrameArrived event.
BodyFrameReader	Represents a reader for body frames.
BodyFrameReference	Represents a reference to an actual body frame.
BodyFrameSource	Represents a source of body frames from a KinectSensor.
BodyIndexFrame	Represents a frame that indicates which depth or infrared pixels belong to tracked people and which do not.
BodyIndexFrameArrivedEventArgs	Represents the arguments for a body index frame reader's FrameArrived event.
BodyIndexFrameReader	Represents a reader for body index frames.
BodyIndexFrameReference	Represents a reference to an actual body index frame.
BodyIndexFrameSource	Represents a source of body index frames from a KinectSensor.
ColorCameraSettings	Represents the settings of the color camera.
ColorFrame	Represents a color frame from the ColorFrameSource of a KinectSensor.
ColorFrameArrivedEventArgs	Represents the arguments for a color frame reader's FrameArrived event.
ColorFrameReader	Represents a reader for color frames.
ColorFrameReference	Represents a reference to an actual color frame.
ColorFrameSource	Represents a source of color frames from a KinectSensor.

CoordinateMapper	Represents the mapper that provides translation services from one type of point to another.
CoordinateMappingChangedEventArgs	Represents the arguments for a coordinate mapping's CoordinateMappingChanged event.
DepthFrame	Represents a frame where each pixel represents the distance (in millimeters) of the closest object seen by that pixel.
DepthFrameArrivedEventArgs	Represents the arguments for a depth frame reader's FrameArrived event.
DepthFrameReader	Represents a reader for depth frames.
DepthFrameReference	Represents a reference to an actual depth frame.
DepthFrameSource	Represents a source of depth frames from a KinectSensor.
FrameCapturedEventArgs	Represents the arguments for a frame source's FrameCaptured event.
FrameDescription	Represents the properties of an image frame from the KinectSensor.
InfraredFrame	Represents a frame that provides a view of the scene that looks just like a black and white photograph, but is actively lit, so brightness is consistent regardless of location and room brightness.
InfraredFrameArrivedEventArgs	Represents the arguments for an infrared frame reader's FrameArrived event.
InfraredFrameReader	Represents a reader for infrared frames.
InfraredFrameReference	Represents a reference to an actual infrared frame.
InfraredFrameSource	Represents a source of infrared frames from a KinectSensor.
IsAvailableChangedEventArgs	Represents the arguments for a KinectSensor's IsAvailableChanged event.

KinectSensor	Represents a KinectSensor device.
LongExposureInfraredFrame	Represents a long exposure infrared frame.
LongExposureInfraredFrameArrivedEventArgs	Represents the arguments for a long exposure infrared frame reader's FrameArrived event.
LongExposureInfraredFrameReader	Represents a reader for long exposure infrared frames.
LongExposureInfraredFrameReference	Represents a reference to an actual long exposure infrared frame.
LongExposureInfraredFrameSource	Represents a source of long exposure infrared frames from a Kinect sensor.
MultiSourceFrame	Represents a multi source frame from the KinectSensor.
MultiSourceFrameArrivedEventArgs	Represents the arguments for a multi source frame reader's FrameArrived event.
MultiSourceFrameReader	Represents a reader for multi source frames.
MultiSourceFrameReference	Represents a reference to an actual multi source frame.

Structures

Name	Description
CameraIntrinsics	Represents the calibration data for the depth camera.
CameraSpacePoint	Represents a 3D point in camera space (in meters). The origin point (0,0,0), of the coordinate system is the camera position.
ColorSpacePoint	Represents a 2D point in color space, expressed in pixels.
DepthSpacePoint	Represents pixel coordinates within a depth image.
Joint	Represents the position of a joint of a body.
JointOrientation	Represents the orientation of a joint of a body.

Vector4	Represents a 4D vector.

Enumerations

Name	Description
Activity	The activity in which a body may be engaged.
Appearance	Appearance characteristics a body may exhibit.
AudioBeamMode	Types of audio beam angle determination.
ColorImageFormat	The available color image formats.
DetectionResult	Gesture detection result options.
Expression	User expressions. Expression functionality is not supported for Kinect for Windows apps. This enumeration is included to support cross-compilation with the Xbox SDK.
FrameCapturedStatus	Captured frame status options.
FrameEdges	Identifies if the user's body is visible by indicating any portion of the user that is not in the camera's field of view.
FrameSourceTypes	The types frame sources for a MultiSourceReader.
HandState	Possible hand states.
JointType	Joint types in a skeleton.
KinectAudioCalibrationState	Specifies the Kinect for Windows sensor audio calibration states.
KinectCapabilities	Capabilities of the Kinect sensor.
TrackingConfidence	Specifies the confidence level of a body's tracked attribute.
TrackingState	The state of tracking a body or body's attribute.

AudioBeam Class

Represents an audio beam.

Syntax

C#

```
public sealed class AudioBeam : INotifyPropertyChanged
```

Members

AudioBeam has the following members.

Properties

Name	Description
AudioBeamMode	Gets or sets the audio beam mode, which determines the type of beam angle.
AudioSource	Gets the audio source.
BeamAngle	Gets or sets the beam angle, which is the direction that the sensor is actively listening.
BeamAngleConfidence	Gets the confidence in the beam angle; the range is [0.0, 1.0], where 1 is the highest possible confidence.
RelativeTime	Gets the relative time of this frame.

Methods

Name	Description
OpenInputStream	Opens the input stream. The input stream is a mono 32-bit IEEE floating point PCM stream sampled at 16 kHz. Typical PCM values will be between -1 and +1.

Events

Name	Description
PropertyChanged	Occurs when a property of the AudioBeam class changes.

Remarks

To capture audio, the sensor receives sounds from every direction. However, like the cone of light from a lighthouse where the light is the brightest, the audio capture hardware has an imaginary cone that is able to capture audio signals the best. Audio waves that propagate through the length of the cone can be separated from audio waves that travel across the cone. If you point the cone in the direction of the audio that your application is most interested in capturing, you can improve the ability to capture and separate that audio source from other competing audio sources. Therefore, use the beam angle to set the direction of the imaginary cone to improve your ability to capture a specific audio source.

Similar to the sound source angle, the beam angle is also defined in the x-z plane of the sensor perpendicular to the z-axis. The beam angle and the sound source angle are both updated continuously once the sensor has started streaming audio data (when the Start method is called).

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

AudioBeamFrame Class

Represents an audio beam frame.

Syntax

C#

```
public sealed class AudioBeamFrame : IDisposable
```

Members

AudioBeamFrame has the following members.

Properties

Name	Description
AudioBeam	Gets the audio beam.
AudioSource	Gets the audio source for this frame.
Duration	Gets the duration of the audio beam frame.
RelativeTimeStart	Gets the time the audio beam frame started.
SubFrames	Gets the audio beam sub frames.

Methods

Name	Description
Close	Releases system resources associated with the audio beam frame.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

AudioBeamFrameArrivedEventArgs Class

Arguments for the audio related FrameReady events.

Syntax

C#

```
public sealed class AudioBeamFrameArrivedEventArgs
```

Members

AudioBeamFrameArrivedEventArgs has the following members.

Properties

Name	Description
FrameReference	Gets the frame reference.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

AudioBeamFrameList Class

Represents a list of audio beam frames.

Syntax

C#

```
public sealed class AudioBeamFrameList :
IReadOnlyList<AudioBeamFrame>, IEnumerable<AudioBeamFrame>,
IDisposable
```

Members

AudioBeamFrameList has the following members.

Properties

Name	Description
Size	Gets the size of the audio beam list.

Methods

Name	Description
Close	Releases system resources associated with the audio beam frame list.
First	Gets the head frame in the audio beam frame list.
GetAt	Retrieves an audio beam frame at a specified index in the list.
GetMany	Retrieves the audio beam frames that start at the specified index in the audio beam frame list.
IndexOf	Retrieves the zero-based index of the first occurrence of the specified audio beam frame in the audio beam frame list.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

AudioBeamFrameReader Class

Represents an audio beam frame reader.

Syntax

C#

```
public sealed class AudioBeamFrameReader : IDisposable,
INotifyPropertyChanged
```

Members

AudioBeamFrameReader has the following members.

Properties

Name	Description
AudioSource	Gets the audio source of the frame reader.
IsPaused	Gets or sets a boolean that indicates if this reader is paused.

Methods

Name	Description
AcquireLatestBeamFrames	Gets the latest audio beam frames.
Close	Closes and releases system resources associated with the audio beam frame reader.

Events

Name	Description
FrameArrived	Event that fires whenever a frame is captured.
PropertyChanged	Occurs when a property of the AudioBeamFrameReader class changes.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

AudioBeamFrameReference Class

Represents an audio frame reference.

Syntax

C#

```
public sealed class AudioBeamFrameReference
```

Members

AudioBeamFrameReference has the following members.

Properties

Name	Description
RelativeTime	Gets the relative time of this frame.

Methods

Name	Description
AcquireBeamFrames	Container for one frame's worth of audio beam image data. Can return null if the data is not available. Upon success, returns the AudioBeamFrame collection corresponding to this event, which must be Disposed.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

AudioBeamSubFrame Class

Represents an audio beam sub frame.

Syntax

C#

```
public sealed class AudioBeamSubFrame : IDisposable
```

Members

AudioBeamSubFrame has the following members.

Properties

Name	Description
AudioBeamMode	Gets the audio beam mode.
AudioBodyCorrelations	Acquires the list of the AudioBodyCorrelation objects available in this subframe.
BeamAngle	Gets the angle (in radians) of the audio beam, which is the direction that the sensor is actively listening.

BeamAngleConfidence	Gets the confidence in the beam angle; the range is [0.0, 1.0], where 1 is the highest possible confidence.
Duration	Gets the duration of the audio beam sub frame.
FrameLengthInBytes	Gets the length of a frame in bytes.
RelativeTime	Gets the relative time of this sub frame.

Methods

Name	Description
Close	Releases system resources associated with the audio beam sub frame.
CopyFrameDataToArray	Copy the audio buffer (32-bit float, mono, 16khz sample rate) into the array provided.
CopyFrameDataToBuffer	Copies the frame data into the array provided.
LockAudioBuffer	Locks the audio buffer in preparation for reading the data.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

AudioBodyCorrelation Class

Represents a correlation between an audio frame and a unique body tracking id.

Syntax

C#

```
public sealed class AudioBodyCorrelation
```

Members

AudioBodyCorrelation has the following members.

Properties

Name	Description
BodyTrackingId	Gets the unique body tracking id associated with this subframe.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

AudioSource Class

Represents an audio frame source.

Syntax

C#

```
public sealed class AudioSource : INotifyPropertyChanged
```

Members

AudioSource has the following members.

Properties

Name	Description
AudioBeams	Gets the audio beams.
AudioCalibrationState	Gets a value that indicates whether or not the Kinect Sensor is properly calibrated to listen for audio. This API is not implemented in the Kinect for Windows v2 SDK and will always return Calibrated. It is included to support cross-compilation with the Xbox SDK.
IsActive	Gets the current activity status of this source.
KinectSensor	Gets the parent sensor.
MaxSubFrameCount	Gets the maximum number of sub frames.
SubFrameDuration	Gets the sub frame duration.
SubFrameLengthInBytes	Gets the sub frame length (in bytes).

Methods

Name	Description
OpenReader	Opens a new stream reader. This reader must be disposed.

Events

Name	Description
FrameCaptured	Event that fires whenever a frame is captured.
PropertyChanged	Occurs when a property of the AudioSource class changes.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

Body Class

Represents a body.

Syntax

C#

```
public sealed class Body : IDisposable
```

Members

Body has the following members.

Properties

Name	Description
Activities	[Deprecated] Gets the status of the body's possible activities. This API is not implemented in the Kinect for Windows v2 SDK and will always return null. It is included to support cross-compilation with the Xbox SDK.
Appearance	[Deprecated] Gets the status of the body's possible appearance characteristics. This API is not implemented in the Kinect for Windows v2 SDK and will always return null. It is included to support cross-compilation with the Xbox SDK.
ClippedEdges	Gets the edges of the field of view that clip the body.
Engaged	[Deprecated] Gets the status of the body's engagement. This API is not implemented in the Kinect for Windows v2 SDK. It is included to support cross-compilation with the Xbox SDK.
Expressions	Gets the status of the body's possible expressions. This API is not implemented in the Kinect for Windows v2 SDK and will always return null. It is included to support cross-compilation with the Xbox SDK.
HandLeftConfidence	Gets the confidence of the body's left hand state.
HandLeftState	Gets the status of the body's left hand state.
HandRightConfidence	Gets the confidence of the body's right hand state.
HandRightState	Gets the status of the body's right hand state.
IsRestricted	Gets whether or not the body is restricted.
IsTracked	Gets whether or not the body is tracked.
JointCount	Gets the number of joints in a body.
JointOrientations	Gets the joint orientations of the body.
Joints	Gets the joint positions of the body.
Lean	Gets the lean vector of the body.
LeanTrackingState	Gets the tracking state for the body lean.

TrackingId	Gets the tracking ID for the body.

Methods

Name	Description
Close	Releases system resources associated with the body.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

BodyFrame Class

Represents a frame that contains all the computed real-time tracking information about people that are in view of the sensor.

Syntax

C#

```
public sealed class BodyFrame : IDisposable
```

Members

BodyFrame has the following members.

Properties

Name	Description
BodyCount	Gets the body count, which is the number of bodies the system can track and thus the size of the collection that must be used to store these bodies.
BodyFrameSource	Gets the source of the body frame.
FloorClipPlane	Gets the floor clip plane of the body frame in hessian normal form. The (x,y,z) components are a unit vector indicating the normal of the plane, and w is the distance from the plane to the origin in meters.
RelativeTime	Gets the timestamp of the body frame.

Methods

Name	Description
Close	Releases system resources associated with the body frame.
GetAndRefreshBodyData	Gets refreshed body data.

Remarks

The computed data provided by this frame type includes skeletal joints and orientations, hand states, and more for up to 6 people at a time. These tracking features provide a great baseline for getting started with human interaction in your app.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

BodyFrameArrivedEventArgs Class

Represents the arguments for a body frame reader's FrameArrived event.

Syntax

C#

```
public sealed class BodyFrameArrivedEventArgs
```

Members

BodyFrameArrivedEventArgs has the following members.

Properties

Name	Description
FrameReference	Gets the reference to the body frame for the FrameArrived event.

Remarks

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

BodyFrameReader Class

Represents a reader for body frames.

Syntax

C#

```
public sealed class BodyFrameReader : IDisposable,
INotifyPropertyChanged
```

Members

BodyFrameReader has the following members.

Properties

Name	Description
BodyFrameSource	Gets the source of the body frames.
IsPaused	Gets or sets whether the body frame reader is paused.

Methods

Name	Description
AcquireLatestFrame	Gets the most recent body frame.
Close	Closes and releases system resources associated with the body frame reader.

Events

Name	Description
FrameArrived	Event that fires whenever a frame is captured.
PropertyChanged	Occurs when a property of the BodyFrameReader class changes.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

BodyFrameReference Class

Represents a reference to an actual body frame.

Syntax

C#

```
public sealed class BodyFrameReference
```

Members

BodyFrameReference has the following members.

Properties

Name	Description
RelativeTime	Gets the timestamp of the referenced body frame.

Methods

Name	Description
AcquireFrame	Gets the actual body frame from the reference.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

BodyFrameSource Class

Represents a source of body frames from a KinectSensor.

Syntax

C#

```
public sealed class BodyFrameSource : INotifyPropertyChanged
```

Members

BodyFrameSource has the following members.

Properties

Name	Description
BodyCount	Gets the number of bodies.
IsActive	Gets whether the body frame source is active.
KinectSensor	Gets the KinectSensor with which the body frame source is associated.

Methods

Name	Description
OpenReader	Creates a frame reader for the body frame source.
OverrideHandTracking	Overloaded. Overloaded methods for OverrideHandTracking.

Events

Name	Description
FrameCaptured	Event that is raised when the next body frame is ready to be delivered to subscribed readers.
PropertyChanged	Occurs when a property of the BodyFrameSource class changes.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

BodyIndexFrame Class

Represents a frame that indicates which depth or infrared pixels belong to tracked people and which do not.

Syntax

C#

```
public sealed class BodyIndexFrame : IDisposable
```

Members

BodyIndexFrame has the following members.

Properties

Name	Description
BodyIndexFrameSource	Gets the source of the body index frame.
FrameDescription	Gets the description of the body index frame.
RelativeTime	Gets the timestamp of the body index frame.

Methods

Name	Description

Close	Releases system resources associated with the body index frame.
CopyFrameDataToArray	Copies the body index frame data into the array provided.
CopyFrameDataToBuffer	Copies the body index frame data into the memory location provided.
LockImageBuffer	Gives an app access to the underlying buffer used by the system to store this frame's data.

Remarks

The pixel values in this frame are 8-bit unsigned integers, where 0-5 map directly to the BodyData index in the BodyFrame. Values greater than the value obtained from BodyCount indicate the pixel is part of the background, not associated with a tracked body. This frame is useful for green screening applications, or any scenario where you want to display the silhouette of the user. It also provides a good starting bounds for custom depth algorithms.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

BodyIndexFrameArrivedEventArgs Class

Represents the arguments for a body index frame reader's FrameArrived event.

Syntax

C#

```
public sealed class BodyIndexFrameArrivedEventArgs
```

Members

BodyIndexFrameArrivedEventArgs has the following members.

Properties

Name	Description
FrameReference	Gets the reference to the body index frame for the FrameArrived event.

Remarks

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

BodyIndexFrameReader Class

Represents a reader for body index frames.

Syntax

C#

```
public sealed class BodyIndexFrameReader : IDisposable,
INotifyPropertyChanged
```

Members

BodyIndexFrameReader has the following members.

Properties

Name	Description
BodyIndexFrameSource	Gets the source of the body index frames.
IsPaused	Gets or sets whether the body index frame reader is paused.

Methods

Name	Description
AcquireLatestFrame	Gets the most recent body index frame.
Close	Closes and releases system resources associated with the body index frame reader.

Events

Name	Description
FrameArrived	Event that fires when a new frame is ready.
PropertyChanged	Occurs when a property of the BodyIndexFrameReader class changes.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

BodyIndexFrameReference Class

Represents a reference to an actual body index frame.

Syntax

C#

```
public sealed class BodyIndexFrameReference
```

Members

BodyIndexFrameReference has the following members.

Properties

Name	Description
RelativeTime	Gets the unique relative time at which this frame was produced.

Methods

Name	Description
AcquireFrame	Gets the actual body index frame from the reference.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

BodyIndexFrameSource Class

Represents a source of body index frames from a KinectSensor.

Syntax

C#

```
public sealed class BodyIndexFrameSource : INotifyPropertyChanged
```

Members

BodyIndexFrameSource has the following members.

Properties

Name	Description
FrameDescription	Gets the description of the body index frames.

IsActive	Gets whether the body index frame source is active.
KinectSensor	Gets the Kinect sensor of the body index frame source.

Methods

Name	Description
OpenReader	Creates a frame reader for the body index frame source.

Events

Name	Description
FrameCaptured	Event that is raised when the next body index frame is ready to be delivered to subscribed readers.
PropertyChanged	Occurs when a property of the BodyIndexFrameSource class changes.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

ColorCameraSettings Class

Represents the settings of the color camera.

Syntax

C#

```
public sealed class ColorCameraSettings
```

Members

ColorCameraSettings has the following members.

Properties

Name	Description
ExposureTime	Gets the exposure time.
FrameInterval	Gets the interval beween the beginning of one exposure and the next.
Gain	Gets the gain.
Gamma	Gets the gamma exponent.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

ColorFrame Class

Represents a color frame from the ColorFrameSource of a KinectSensor.

Syntax

C#

```
public sealed class ColorFrame : IDisposable
```

Members

ColorFrame has the following members.

Properties

Name	Description
ColorCameraSettings	Gets the color camera settings of the color frame.
ColorFrameSource	Gets the source of the color frame.
FrameDescription	Gets the description of the color frame.
RawColorImageFormat	Gets the format of the color frame data.
RelativeTime	Gets the timestamp of the color frame.

Methods

Name	Description
Close	Releases system resources associated with the color frame.
CopyConvertedFrameDataToArray	Converts the raw format into the requested format and copies the data into the array provided.
CopyConvertedFrameDataToBuffer	

	Converts the raw format into the requested format and copies the data into the memory location provided.
CopyRawFrameDataToArray	Copies the raw frame data into the array provided.
CopyRawFrameDataToBuffer	Copies raw frame data into the memory location provided.
CreateFrameDescription	Creates a FrameDescription object for the ColorFrame of the requested format.
LockRawImageBuffer	Gives an app access to the underlying buffer used by the system to store this frame's data.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

ColorFrameArrivedEventArgs Class

Represents the arguments for a color frame reader's FrameArrived event.

Syntax

C#

```
public sealed class ColorFrameArrivedEventArgs
```

Members

ColorFrameArrivedEventArgs has the following members.

Properties

Name	Description
FrameReference	Gets the reference to the color frame for the FrameArrived event.

Remarks

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

ColorFrameReader Class

Represents a reader for color frames.

Syntax

C#

```
public sealed class ColorFrameReader : IDisposable,
INotifyPropertyChanged
```

Members

ColorFrameReader has the following members.

Properties

Name	Description
ColorFrameSource	Represents a source of color frames from a KinectSensor.
IsPaused	Gets or sets whether the color frame reader is paused.

Methods

Name	Description
AcquireLatestFrame	Gets the most recent color frame.
Close	Closes and releases system resources associated with the color frame reader.

Events

Name	Description
FrameArrived	Event that fires whenever a frame is captured.
PropertyChanged	Occurs when a property of the ColorFrameReader class changes.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

ColorFrameReference Class

Represents a reference to an actual color frame.

Syntax

C#

```
public sealed class ColorFrameReference
```

Members

ColorFrameReference has the following members.

Properties

Name	Description
RelativeTime	Gets the timestamp of the referenced color frame.

Methods

Name	Description
AcquireFrame	Gets the actual color frame from the reference.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

ColorFrameSource Class

Represents a source of color frames from a KinectSensor.

Syntax

C#

```
public sealed class ColorFrameSource : INotifyPropertyChanged
```

Members

ColorFrameSource has the following members.

Properties

Name	Description
FrameDescription	Gets the description of the color frames.
IsActive	Gets whether the color frame source is active.
KinectSensor	Gets the Kinect sensor of the color frame source.

Methods

Name	Description
CreateFrameDescription	Creates a FrameDescription object for the ColorFrame of the requested format.
OpenReader	Creates a frame reader for the color frame source.

Events

Name	Description
FrameCaptured	Event that is raised when the next color frame is ready to be delivered to subscribed readers.
PropertyChanged	Occurs when a property of the ColorFrameSource class changes.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

CoordinateMapper Class

Represents the mapper that provides translation services from one type of point to another.

Syntax

C#

```
public sealed class CoordinateMapper
```

Members

CoordinateMapper has the following members.

Methods

Name	Description
GetDepthCameraIntrinsics	Returns the calibration data for the depth camera.
GetDepthFrameToCameraSpaceTable	Gets the depth frame to camera space look-up table.
MapCameraPointsToColorSpace	Produces an array of color space points from an array of camera points.
MapCameraPointsToDepthSpace	Maps points at a specified memory location from camera space to depth space.
MapCameraPointToColorSpace	Maps a point from camera space to color space.
MapCameraPointToDepthSpace	Maps a point from camera space to depth space.
MapColorFrameToCameraSpace	Maps a frame from color space to camera space.
MapColorFrameToCameraSpaceUsingIBuffer	Maps a frame from color space to camera space.
MapColorFrameToDepthSpace	Maps a frame from color space to depth space.
MapColorFrameToDepthSpaceUsingIBuffer	Maps a frame from color space to depth space.
MapDepthFrameToCameraSpace	

	Maps a frame from depth space to camera space.
MapDepthFrameToCameraSpaceUsingIBuffer	Maps a frame from depth space to camera space.
MapDepthFrameToColorSpace	Maps a frame from depth space to color space.
MapDepthFrameToColorSpaceUsingIBuffer	Maps a frame from depth space to color space.
MapDepthPointsToCameraSpace	Produces an array of camera space points from an array of depth points.
MapDepthPointsToColorSpace	Produces an array of color space points from an array of depth points.
MapDepthPointToCameraSpace	Maps a point/depth from depth space to camera space.
MapDepthPointToColorSpace	Maps a point/depth from depth space to color space.

Events

Name	Description
CoordinateMappingChanged	Event that is raised when any of the mappings between camera, color, and depth space change.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

CoordinateMappingChangedEventArgs Class

Represents the arguments for a coordinate mapping's CoordinateMappingChanged event.

Syntax

C#

```
public sealed class CoordinateMappingChangedEventArgs
```

Members

CoordinateMappingChangedEventArgs has the following members.

Remarks

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

DepthFrame Class

Represents a frame where each pixel represents the distance (in millimeters) of the closest object seen by that pixel.

Syntax

C#

```
public sealed class DepthFrame : IDisposable
```

Members

DepthFrame has the following members.

Properties

Name	Description
DepthFrameSource	Gets the source of the depth frame.
DepthMaxReliableDistance	Gets the maximum reliable depth of the depth frame, in millimeters.
DepthMinReliableDistance	Gets the minimum reliable depth of the depth frame, in millimeters.
FrameDescription	Gets the description of the depth frame.
RelativeTime	Gets the timestamp of the depth frame.

Methods

Name	Description
Close	Releases system resources associated with the depth frame.
CopyFrameDataToArray	Copies the depth frame data into the array provided.

CopyFrameDataToBuffer	Copies the depth frame data into the memory location provided.
LockImageBuffer	Gives an app access to the underlying buffer used by the system to store this frame's data.

Remarks

The data for this frame is stored as 16-bit unsigned integers, where each value represents the distance in millimeters. The maximum depth distance is 8 meters, although reliability starts to degrade at around 4.5 meters. Developers can use the depth frame to build custom tracking algorithms in cases where the BodyFrame isn't enough.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

DepthFrameArrivedEventArgs Class

Represents the arguments for a depth frame reader's FrameArrived event.

Syntax

C#

```
public sealed class DepthFrameArrivedEventArgs
```

Members

DepthFrameArrivedEventArgs has the following members.

Properties

Name	Description
FrameReference	Gets the reference to the depth frame for the FrameArrived event.

Remarks

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

DepthFrameReader Class

Represents a reader for depth frames.

Syntax

C#

```
public sealed class DepthFrameReader : IDisposable,
INotifyPropertyChanged
```

Members

DepthFrameReader has the following members.

Properties

Name	Description
DepthFrameSource	Gets the source of the depth frames.
IsPaused	Gets or sets whether the depth frame reader is paused.

Methods

Name	Description
AcquireLatestFrame	Gets the most recent depth frame.
Close	Closes and releases system resources associated with the depth frame reader.

Events

Name	Description
FrameArrived	Event that fires whenever a frame is captured.
PropertyChanged	Occurs when a property of the DepthFrameReader class changes.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

DepthFrameReference Class

Represents a reference to an actual depth frame.

Syntax

C#

```
public sealed class DepthFrameReference
```

Members

DepthFrameReference has the following members.

Properties

Name	Description
RelativeTime	Gets the timestamp of the referenced depth frame.

Methods

Name	Description
AcquireFrame	Gets the actual depth frame from the reference.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

DepthFrameSource Class

Represents a source of depth frames from a KinectSensor.

Syntax

C#

```
public sealed class DepthFrameSource : INotifyPropertyChanged
```

Members

DepthFrameSource has the following members.

Properties

Name	Description
DepthMaxReliableDistance	Gets the maximum reliable depth of the depth frames, in millimeters.
DepthMinReliableDistance	Gets the minimum reliable depth of the depth frames, in millimeters.
FrameDescription	Gets the frame description for the format.
IsActive	Gets whether the depth frame source is active.

KinectSensor	Gets the KinectSensor of the depth frame source.

Methods

Name	Description
OpenReader	Creates a frame reader for the depth frame source.

Events

Name	Description
FrameCaptured	Event that is raised when the next depth frame is ready to be delivered to subscribed readers.
PropertyChanged	Occurs when a property of the DepthFrameSource class changes.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

FrameCapturedEventArgs Class

Represents the arguments for a frame source's FrameCaptured event.

Syntax

C#

```
public sealed class FrameCapturedEventArgs
```

Members

FrameCapturedEventArgs has the following members.

Properties

Name	Description
FrameStatus	Gets the status of the captured frame.
FrameType	Gets the type of the captured frame.
RelativeTime	Gets the unique relative time at which the frame was captured.

Remarks

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

FrameDescription Class

Represents the properties of an image frame from the KinectSensor.

Syntax

C#

```
public sealed class FrameDescription
```

Members

FrameDescription has the following members.

Properties

Name	Description
BytesPerPixel	Gets the bytes per pixel of the data for an image frame.
DiagonalFieldOfView	Gets the diagonal field of view for an image frame, in degrees.
Height	Gets the height of an image frame, in pixels.
HorizontalFieldOfView	Gets the horizontal field of view for an image frame, in degrees.
LengthInPixels	Gets the length in pixels of the data for an image frame.
VerticalFieldOfView	Gets the vertical field of view for an image frame, in degrees.
Width	Gets the width of an image frame, in pixels.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

InfraredFrame Class

Represents a frame that provides a view of the scene that looks just like a black and white photograph, but is actively lit, so brightness is consistent regardless of location and room brightness.

Syntax

C#

```
public sealed class InfraredFrame : IDisposable
```

Members

InfraredFrame has the following members.

Properties

Name	Description
FrameDescription	Gets the description of the infrared frame.
InfraredFrameSource	Gets the source of the infrared frame.
RelativeTime	Gets the timestamp of the infrared frame.

Methods

Name	Description
Close	Releases system resources associated with the infrared frame.

CopyFrameDataToArray	Copies the infrared frame data into the array provided.
CopyFrameDataToBuffer	Copies the infrared frame data into the memory location provided.
LockImageBuffer	Gives an app access to the underlying buffer used by the system to store this frame's data.

Remarks

The infrared frame is great for computer vision algorithms where texture is important, such as facial recognition. Data is stored as 16-bit unsigned integers. The infrared frame is also great for green screening, tracking reflective markers, and filtering out low-return (and therefore jittery) depth pixels. Note that the infrared frame is derived from the same sensor as depth, so the images are perfectly aligned. For example, the infrared pixel at row 5 col 9 goes with the depth pixel at row 5 col 9.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

InfraredFrameArrivedEventArgs Class

Represents the arguments for an infrared frame reader's FrameArrived event.

Syntax

C#

```
public sealed class InfraredFrameArrivedEventArgs
```

Members

InfraredFrameArrivedEventArgs has the following members.

Properties

Name	Description
FrameReference	Gets the reference to the infrared frame for the FrameArrived event.

Remarks

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

InfraredFrameReader Class

Represents a reader for infrared frames.

Syntax

C#

```
public sealed class InfraredFrameReader : IDisposable,
INotifyPropertyChanged
```

Members

InfraredFrameReader has the following members.

Properties

Name	Description
InfraredFrameSource	Gets the source of the infrared frames.
IsPaused	Gets or sets whether the infrared frame reader is paused.

Methods

Name	Description
AcquireLatestFrame	Gets the most recent infrared frame.
Close	Closes and releases system resources associated with the infrared frame reader.

Events

Name	Description
FrameArrived	Event that fires whenever a frame is captured.
PropertyChanged	Occurs when a property of the InfraredFrameReader class changes.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

InfraredFrameReference Class

Represents a reference to an actual infrared frame.

Syntax

C#

```
public sealed class InfraredFrameReference
```

Members

InfraredFrameReference has the following members.

Properties

Name	Description
RelativeTime	Gets the timestamp of the referenced infrared frame.

Methods

Name	Description

AcquireFrame	Gets the actual infrared frame from the reference.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

InfraredFrameSource Class

Represents a source of infrared frames from a KinectSensor.

Syntax

C#

```
public sealed class InfraredFrameSource : INotifyPropertyChanged
```

Members

InfraredFrameSource has the following members.

Properties

Name	Description
FrameDescription	Gets the frame description for the format.
IsActive	Gets whether the infrared frame source is active.

KinectSensor	Gets the KinectSensor of the infrared frame source.

Methods

Name	Description
OpenReader	Creates a frame reader for the infrared frame source.

Events

Name	Description
FrameCaptured	Event that is raised when the next infrared frame is ready to be delivered to subscribed readers.
PropertyChanged	Occurs when a property of the InfraredFrameSource class changes.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

IsAvailableChangedEventArgs Class

Represents the arguments for a KinectSensor's IsAvailableChanged event.

Syntax

C#

```
public sealed class IsAvailableChangedEventArgs
```

Members

IsAvailableChangedEventArgs has the following members.

Properties

Name	Description
IsAvailable	Gets whether or not the KinectSensor is available.

Remarks

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

KinectSensor Class

Represents a KinectSensor device.

Syntax

C#

```
public sealed class KinectSensor : INotifyPropertyChanged
```

Members

KinectSensor has the following members.

Properties

Name	Description
AudioSource	Gets the source for audio frames.
BodyFrameSource	Gets the source for body frames.
BodyIndexFrameSource	Gets the source for body index frames.
ColorFrameSource	Gets the source for color frames.
CoordinateMapper	Gets the coordinate mapper.
DepthFrameSource	Gets the source for depth frames.
InfraredFrameSource	Gets the source for infrared frames.
IsAvailable	Gets whether the Kinect sensor is available and able to retrieve frames.
IsOpen	Gets whether or not the KinectSensor is open.
KinectCapabilities	Gets the capabilities of the KinectSensor.
LongExposureInfraredFrameSource	Gets the source for long exposure infrared frames.
Sensors	Gets the list of available sensors.
UniqueKinectId	Gets the unique ID for the KinectSensor.

Methods

Name	Description
Close	Closes and releases system resources associated with the Kinect Sensor.
GetDefault	Gets the default sensor.
Open	Opens the KinectSensor for use.
OpenMultiSourceFrameReader	Creates a frame reader for the multiple frame sources.

Events

Name	Description
IsAvailableChanged	This event fires when the IsAvailable property changes.
PropertyChanged	Occurs when a property of the KinectSensor class changes.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

LongExposureInfraredFrame Class

Represents a long exposure infrared frame.

Syntax

C#

```
public sealed class LongExposureInfraredFrame : IDisposable
```

Members

LongExposureInfraredFrame has the following members.

Properties

Name	Description
FrameDescription	Gets the description of the long exposure infrared frame.
LongExposureInfraredFrameSource	Gets the long exposure infrared frame source.
RelativeTime	Gets the timestamp of the long exposure infrared frame.

Methods

Name	Description
Close	Releases system resources associated with the long exposure infrared frame.
CopyFrameDataToArray	Copies the long exposure frame data into the array provided.
CopyFrameDataToBuffer	Copies the long exposure frame data into the buffer provided.
LockImageBuffer	Locks the buffer so the data can be read.

Remarks

This frame is similar to the InfraredFrame, except it has been exposed over a longer period of time. The result is a higher quality image, with less noise, at the expense of some motion blur for objects that are moving.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

LongExposureInfraredFrameArrivedEventArgs Class

Represents the arguments for a long exposure infrared frame reader's FrameArrived event.

Syntax

C#

```
public sealed class LongExposureInfraredFrameArrivedEventArgs
```

Members

LongExposureInfraredFrameArrivedEventArgs has the following members.

Properties

Name	Description

FrameReference	Gets the reference to the long exposure infrared frame for the FrameArrived event.

Remarks

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

LongExposureInfraredFrameReader Class

Represents a reader for long exposure infrared frames.

Syntax

C#

```
public sealed class LongExposureInfraredFrameReader : IDisposable,
INotifyPropertyChanged
```

Members

LongExposureInfraredFrameReader has the following members.

Properties

Name	Description
IsPaused	Gets or sets whether the long exposure infrared frame reader is paused.
LongExposureInfraredFrameSource	Gets the source of the long exposure infrared frames.

Methods

Name	Description
AcquireLatestFrame	Gets the most recent long exposure infrared frame.
Close	Closes and releases system resources associated with the long exposure infrared frame reader.

Events

Name	Description
FrameArrived	Event that fires whenever a frame is captured.
PropertyChanged	Occurs when a property of the LongExposureInfraredFrameReader class changes.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

LongExposureInfraredFrameReference Class

Represents a reference to an actual long exposure infrared frame.

Syntax

C#

```
public sealed class LongExposureInfraredFrameReference
```

Members

LongExposureInfraredFrameReference has the following members.

Properties

Name	Description
RelativeTime	Gets the timestamp of the referenced long exposure infrared frame.

Methods

Name	Description
AcquireFrame	Gets the actual long exposure infrared frame from the reference.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

LongExposureInfraredFrameSource Class

Represents a source of long exposure infrared frames from a Kinect sensor.

Syntax

C#

```
public sealed class LongExposureInfraredFrameSource :
INotifyPropertyChanged
```

Members

LongExposureInfraredFrameSource has the following members.

Properties

Name	Description
FrameDescription	Gets the description of the long exposure infrared frames.
IsActive	Gets whether the long exposure infrared frame source is active.
KinectSensor	Gets the sensor of the long exposure infrared frame source.

Methods

Name	Description
OpenReader	Creates a frame reader for the long exposure infrared frame source.

Events

Name	Description
FrameCaptured	Event that is raised whenever a frame is captured.
PropertyChanged	Occurs when a property of the LongExposureInfraredFrameSource class changes.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

MultiSourceFrame Class

Represents a multi source frame from the KinectSensor.

Syntax

C#

```
public sealed class MultiSourceFrame : IDisposable
```

Members

MultiSourceFrame has the following members.

Properties

Name	Description
BodyFrameReference	Gets the body frame reference of the multi source frame.
BodyIndexFrameReference	Gets the body index frame reference of the multi source frame.
ColorFrameReference	Gets the color frame reference of the multi source frame.
DepthFrameReference	Gets the depth frame reference of the multi source frame.
InfraredFrameReference	Gets the infrared frame reference of the multi source frame.
LongExposureInfraredFrameReference	Gets the long exposure infrared frame reference of the multi source frame.

Methods

Name	Description
Close	Releases system resources associated with the multi-source frame.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

MultiSourceFrameArrivedEventArgs Class

Represents the arguments for a multi source frame reader's FrameArrived event.

Syntax

C#

```
public sealed class MultiSourceFrameArrivedEventArgs
```

Members

MultiSourceFrameArrivedEventArgs has the following members.

Properties

Name	Description
FrameReference	Gets the reference to the multi source frame for the FrameArrived event.

Remarks

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

MultiSourceFrameReader Class

Represents a reader for multi source frames.

Syntax

C#

```
public sealed class MultiSourceFrameReader : IDisposable,
INotifyPropertyChanged
```

Members

MultiSourceFrameReader has the following members.

Properties

Name	Description
FrameSourceTypes	Gets the types of frames being read by the multi source frame reader.
IsPaused	Gets or sets whether the multi source frame reader is paused.
KinectSensor	Gets the Kinect sensor associated with the reader.

Methods

Name	Description
AcquireLatestFrame	Gets the most recent multi source frame.
Close	Closes and releases system resources associated with the multi-source frame reader.

Events

Name	Description
MultiSourceFrameArrived	Event that fires whenever a frame is captured.
PropertyChanged	Occurs when a property of the MultiSourceFrameReader changes.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

MultiSourceFrameReference Class

Represents a reference to an actual multi source frame.

Syntax

C#

```
public sealed class MultiSourceFrameReference
```

Members

MultiSourceFrameReference has the following members.

Methods

Name	Description
AcquireFrame	Gets the current frame held by this reference.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

CameraIntrinsics Structure

Represents the calibration data for the depth camera.

Syntax

C#

```
public struct CameraIntrinsics
```

Members

CameraIntrinsics has the following members.

Fields

Name	Description
FocalLengthX	The X focal length of the camera, in pixels.
FocalLengthY	The Y focal length of the camera, in pixels.
PrincipalPointX	The principal point of the camera in the X dimension, in pixels.
PrincipalPointY	The principal point of the camera in the Y dimension, in pixels.
RadialDistortionFourthOrder	The fourth order radial distortion parameter of the camera.
RadialDistortionSecondOrder	The second order radial distortion parameter of the camera.
RadialDistortionSixthOrder	The sixth order radial distortion parameter of the camera.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

CameraSpacePoint Structure

Represents a 3D point in camera space (in meters). The origin point (0,0,0), of the coordinate system is the camera position.

Syntax

C#

```
public struct CameraSpacePoint
```

Members

CameraSpacePoint has the following members.

Fields

Name	Description
X	The X coordinate of the point, in meters.
Y	The Y coordinate of the point, in meters.
Z	The Z coordinate of the point, in meters.

Remarks

Camera space refers to the 3D coordinate system used by Kinect. The coordinate system is defined as follows:

- The origin (x=0, y=0, z=0) is located at the center of the IR sensor on Kinect
- X grows to the sensor's left
- Y grows up (note that this direction is based on the sensor's tilt)
- Z grows out in the direction the sensor is facing
- 1 unit = 1 meter

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace
Body tracking

ColorSpacePoint Structure

Represents a 2D point in color space, expressed in pixels.

Syntax

C#

```
public struct ColorSpacePoint
```

Members

ColorSpacePoint has the following members.

Fields

Name	Description
X	The X coordinate of the point, in pixels.
Y	The Y coordinate of the point, in pixels.

Remarks

A color space point describes a 2D point on the color image. So a position in color space is a row/column location of a pixel on the image, where x=0, y=0 is the pixel at the top left of the color image, and x=1919, y=1079 (width-1, height-1) corresponds to the bottom right.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

DepthSpacePoint Structure

Represents pixel coordinates within a depth image.

Syntax

C#

```
public struct DepthSpacePoint
```

Members

DepthSpacePoint has the following members.

Fields

Name	Description
X	The X coordinate of the point, in pixels.

Y	The Y coordinate of the point, in pixels.

Remarks

Depth space is the term used to describe a 2D location on the depth image. Think of this as a row/column location of a pixel where x is the column and y is the row. So x=0, y=0 corresponds to the top left corner of the image and x=511, y=423 (width-1, height-1) is the bottom right corner of the image. In some cases, a z value is needed in order to map out of depth space. For these cases, simply sample the depth image at the row/column in question, and use that value (which is depth in millimeters) directly as z.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

Joint Structure

Represents the position of a joint of a body.

Syntax

C#

```
public struct Joint
```

Members

Joint has the following members.

Fields

Name	Description
JointType	The type of joint.
Position	The position of the joint in camera space.
TrackingState	The tracking state of the joint.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace
Body tracking

JointOrientation Structure

Represents the orientation of a joint of a body.

Syntax

C#

```
public struct JointOrientation
```

Members

JointOrientation has the following members.

Fields

Name	Description
JointType	The type of joint.
Orientation	The orientation of the joint.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

Vector4 Structure

Represents a 4D vector.

Syntax

C#

```
public struct Vector4
```

Members

Vector4 has the following members.

Fields

Name	Description
W	The W coordinate of the vector.
X	The X coordinate of the vector.
Y	The Y coordinate of the vector.
Z	The Z coordinate of the vector.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

Activity Enumeration

The activity in which a body may be engaged.

Syntax

C#

```
public enum Activity
```

Members

Member	Value	Description
EyeLeftClosed	0	The left eye is closed.
EyeRightClosed	1	The right eye is closed.
LookingAway	4	The person is looking away from the sensor.
MouthMoved	3	The mouth moved.
MouthOpen	2	The mouth is opened.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

Appearance Enumeration

Appearance characteristics a body may exhibit.

Syntax

C#

```
public enum Appearance
```

Members

Member	Value	Description

WearingGlasses	0	The user is wearing glasses.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

AudioBeamMode Enumeration

Types of audio beam angle determination.

Syntax

C#

```
public enum AudioBeamMode
```

Members

Member	Value	Description
Automatic	0	The beam angle is automatically adjusted to point to the loudest sound source.
Manual	1	The beam angle is fixed and can be set by the application.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

ColorImageFormat Enumeration

The available color image formats.

Syntax

C#

```
public enum ColorImageFormat
```

Members

Member	Value	Description
Bayer	4	Bayer format
Bgra	3	Bgra format
None	0	An unspecified format
Rgba	1	Rgba format
Yuv	2	Yuv format
Yuy2	5	Yuy2 format

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

DetectionResult Enumeration

Gesture detection result options.

Syntax

C#

```
public enum DetectionResult
```

Members

Member	Value	Description
Maybe	2	The appearance or activity might be a gesture.
No	1	The appearance or activity is not a gesture.
Unknown	0	It is unknown whether the appearance or activity is a gesture.
Yes	3	The appearance or activity is a gesture.

Remarks

This enumeration is used in a collection of properties such as Activities and Appearance.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

Expression Enumeration

User expressions. Expression functionality is not supported for Kinect for Windows apps. This enumeration is included to support cross-compilation with the Xbox SDK.

Syntax

C#

```
public enum Expression
```

Members

Member	Value	Description
Happy	1	Happy
Neutral	0	None or neutral

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

FrameCapturedStatus Enumeration

Captured frame status options.

Syntax

C#

```
public enum FrameCapturedStatus
```

Members

Member	Value	Description
Dropped	2	The frame was dropped.
Queued	1	The frame is queued for capture.
Unknown	0	The capture status is unknown.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

FrameEdges Enumeration

Identifies if the user's body is visible by indicating any portion of the user that is not in the camera's field of view.

Syntax

C#

```
[FlagsAttribute]
public enum FrameEdges
```

Members

Member	Value	Description
Bottom	8	The user's body extends below the camera's field of view.
Left	2	The user's body extends to the left of the camera's field of view.
None	0	None of the user's body is out of the camera's field of view, the user is fully visible.
Right	1	The user's body extends to the right of the camera's field of view.
Top	4	The user's body extends above the camera's field of view.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

FrameSourceTypes Enumeration

The types frame sources for a MultiSourceReader.

Syntax

C#

```
[FlagsAttribute]
public enum FrameSourceTypes
```

Members

Member	Value	Description
Audio	64	Audio stream source.
Body	32	Body stream source.
BodyIndex	16	Body index stream source.
Color	1	Color stream source.
Depth	8	Depth stream source.
Infrared	2	Infrared stream source.
LongExposureInfrared	4	Long exposure infrared stream source.
None	0	No source.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

HandState Enumeration

Possible hand states.

Syntax

C#

```
public enum HandState
```

Members

Member	Value	Description
Closed	3	The hand is closed.
Lasso	4	The hand is in the lasso state.
NotTracked	1	Hand state is not tracked.
Open	2	The hand is open.
Unknown	0	The state of the hand is unknown.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

JointType Enumeration

Joint types in a skeleton.

Syntax

C#

```
public enum JointType
```

Members

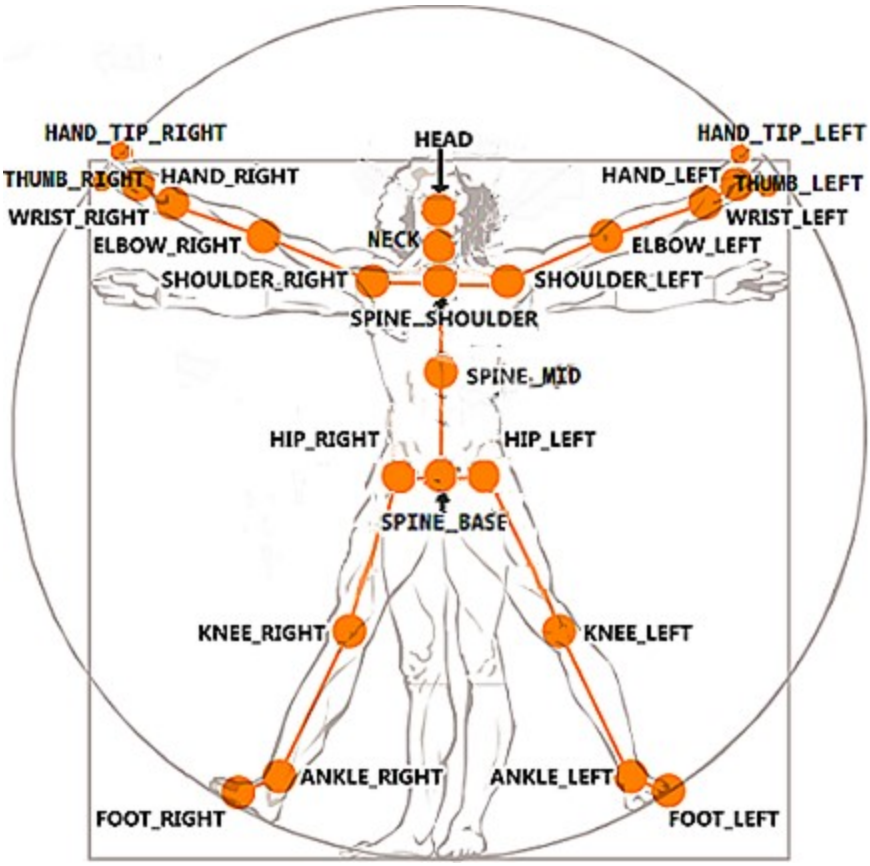
Member	Value	Description
AnkleLeft	14	Left ankle
AnkleRight	18	Right ankle
ElbowLeft	5	Left elbow
ElbowRight	9	Right elbow
FootLeft	15	Left foot
FootRight	19	Right foot
HandLeft	7	Left hand
HandRight	11	Right hand
HandTipLeft	21	Tip of the left hand
HandTipRight	23	Tip of the right hand
Head	3	Head

HipLeft	12	Left hip
HipRight	16	Right hip
KneeLeft	13	Left knee
KneeRight	17	Right knee
Neck	2	Neck
ShoulderLeft	4	Left shoulder
ShoulderRight	8	Right shoulder
SpineBase	0	Base of the spine
SpineMid	1	Middle of the spine
SpineShoulder	20	Spine
ThumbLeft	22	Left thumb
ThumbRight	24	Right thumb
WristLeft	6	Left wrist
WristRight	10	Right wrist

Remarks

This following figure shows the skeleton that is made up of each of these joint types.

Figure 1. Skeleton positions relative to the human body



Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

KinectAudioCalibrationState Enumeration

Specifies the Kinect for Windows sensor audio calibration states.

Syntax

C#

```
public enum KinectAudioCalibrationState
```

Members

Member	Value	Description
Calibrated	2	Sensor audio is calibrated.
CalibrationRequired	1	Sensor audio needs to be calibrated.
Unknown	0	Sensor audio calibration state is unknown.

Remarks

Note that the audio calibration state is always Calibrated for Kinect for Windows apps. This enumeration is included to support cross-compilation with the Xbox SDK.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

KinectCapabilities Enumeration

Capabilities of the Kinect sensor.

Syntax

C#

```
[FlagsAttribute]
public enum KinectCapabilities
```

Members

Member	Value	Description
Audio	2	Audio is supported.
Expressions	8	Expressions are supported.
Face	4	Facial recognition is supported.
Gamechat	16	Game chat is supported.
None	0	No capabilities are supported.
Vision	1	Vision is supported.

Remarks

A title declares these capabilities in the **mx:Capability** element in its application manifest file.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

TrackingConfidence Enumeration

Specifies the confidence level of a body's tracked attribute.

Syntax

C#

```
public enum TrackingConfidence
```

Members

Member	Value	Description
High	1	Fully tracked.
Low	0	Not tracked.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace

TrackingState Enumeration

The state of tracking a body or body's attribute.

Syntax

C#

```
public enum TrackingState
```

Members

Member	Value	Description
Inferred	1	The joint data is inferred and confidence in the position data is lower than if it were Tracked.
NotTracked	0	The joint data is not tracked and no data is known about this joint.
Tracked	2	The joint data is being tracked and the data can be trusted.

Remarks

A tracked joint that cannot be seen by the camera is inferred. That is, the joint position is calculated from surrounding joint data rather than captured by the camera.

Requirements

Namespace: WindowsPreview.Kinect
Metadata: windowspreview.kinect.winmd

See also

Reference
WindowsPreview.Kinect Namespace