

OpenMAX AL™ is an application-level multimedia playback and recording API for mobile embedded devices. It provides a device-independent, cross-platform interface for applications to access a device's audio, video and imaging capabilities.

OpenMAX AL is suitable for mobile embedded devices, including basic mobile phones and smart phones, PDAs, mobile digital music players, and other sophisticated media playback and recording devices.

- [n] refers to a section in the OpenMAX AL 1.1 Specification: www.khronos.org/openmax
- [n] refers to a section for the analogous interface in the OpenSL ES 1.1 Specification: www.khronos.org/opensles

Object-Interface Mapping Table

This table describes the object-interface mapping and mandated objects per profile.

- The top row shows whether objects are mandated or optional in the profiles.
- The second row lists the objects available in OpenMAX AL.
- The left column shows the OpenMAX AL interfaces.
- The center columns indicate the object-interface mapping.
- The right column shows analogous interfaces in OpenSL ES when applicable.

	PROFILE	MP	MR	MP	MR	MP	MR	MP	MR	MP	MR	MP	MR	MP	MR	MP	MR	MP	MR	MP	MR	MP	MR	
INTERFACE	OBJECT	Engine		Media Player		Media Recorder		Radio		Camera		Output Mix		Vibra		LED Array		Metadata Extractor					OpenSL ES	
XAAudioDecoderCapabilitiesItf [8.2]																							[8.9]	
XAAudioEncoderCapabilitiesItf [8.4]							2																[8.11]	
XAAudioEncoderItf [8.3]							2																[8.10]	
XAAudioIODeviceCapabilitiesItf [8.5]																							[8.12]	
XACameraItf [8.6]																								
XACameraCapabilitiesItf [8.7]																								
XAConfigExtensionsItf [8.8]																							[8.15]	
XADeviceVolumeItf [8.9]																							[8.16]	
XADynamicInterfaceManagementItf [8.10]																							[8.17]	
XADynamicSourceItf [8.11] (deprecated)																								
XADynamicSourceSinkChangeItf [8.12]																							[8.19]	
XAEngineItf [8.13]																							[8.21]	
XAEqualizerItf [8.14]																							[8.24]	
XAImageControlsItf [8.15]																								
XAImageDecoderCapabilitiesItf [8.16]																								
XAImageEffectsItf [8.17]																								
XAImageEncoderCapabilitiesItf [8.19]																								
XAImageEncoderItf [8.18]							3																	
XALEDArryItf [8.20]																							[8.25]	
XAMetadataExtractionItf [8.21]																							[8.26]	
XAMetadataInsertionItf [8.22]																								
XAMetadataMessageItf [8.23]																							[8.27]	
XAMetadataTraversalItf [8.24]																							[8.28]	
XAObjectItf [8.25]																							[8.34]	
XAOutputMixItf [8.26]																							[8.35]	
XAPlayItf [8.27]																							[8.37]	
XAPlaybackRateItf [8.28]				1	1																		[8.38]	
XAPrefetchStatusItf [8.29]																							[8.39]	
XARadioItf [8.30]																								
XARDSItf [8.31]																								
XARecordItf [8.32]							2																[8.42]	
XASearchItf [8.33]				2	2																		[8.43]	
XASnapshotItf [8.34]							3																	
XAStreamInformationItf [8.35]																								
XAThreadSyncItf [8.36]																							[8.44]	
XAVibrantItf [8.37]																							[8.45]	
XAVideoDecoderCapabilitiesItf [8.38]																								
XAVideoEncoderCapabilitiesItf [8.40]																								
XAVideoEncoderItf [8.39]							2																	
XAVideoPostProcessingItf [8.41]																								
XAVolumeItf [8.42]				4	4																		[8.48]	

Legend for Object-Interface Mapping Table

- MP MR Object mandated in (MP) Media Player or (MR) Media Player/Recorder profile.
- MP MR Object optional in (MP) Media Player or (MR) Media Player/Recorder profile.
- Applicable optional interface.
- Implicit and mandated interface.
- Mandated (explicit) interface.
- n Mandated (explicit) interface with optional methods, mandated only for... 1=time-based media content stored locally; 2=use cases with audio or video; 3=use cases with image; 4=use cases with audio.

Profiles

An OpenMAX AL profile is a defined subset of features of the same functional type collectively required on any implementation that claims to support that profile.

Media Player:

This profile encapsulates media playback functionality including the ability to render audio, video and image data in one or more formats. This profile is appropriate for playback-only devices which do not include any support for capturing or recording media. Personal media players are good examples of devices that would use this profile.

Media Player/Recorder:

This profile encapsulates all-inclusive media playback and recording functionality including the ability to capture as well as render audio, video and image data in one or more formats. High-end mobile phones are good examples of devices that would use this profile. This profile subsumes the Media Player profile.

Functions

xaCreateEngine [6.1]

Initializes the engine object and gives the user a handle.

pEngine	Pointer to the resulting engine object.
numOptions	Number of elements in the options array.
pEngineOptions	Array of optional configuration data.
numInterfaces	Number of interfaces that the object is requested to support (not including implicit interfaces).
pInterfaceIds	An array of numInterfaces interface IDs, which the object should support.
pInterfaceRequired	Array of numInterfaces flags, each specifying whether the respective interface is required on the object or optional.

xaQueryNumSupportedEngineInterfaces() [6.2]

Queries the number of interfaces on an object.

pNumSupportedInterfaces	Identifies the number of supported interfaces available.
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xaQuerySupportedEngineInterfaces() [6.3]

Queries the number of supported interfaces on engine object.

index	Index used to enumerate available supported interfaces.
pInterfaceId	Identifies the supported interface corresponding to the given index.

Interfaces

XAAudioDecoderCapabilitiesItf [8.2]

Queries the engine decode capabilities.

Object: Engine

GetAudioDecoders	Retrieves available audio decoders.
GetAudioDecoderCapabilities	Queries for audio decoder capabilities.

XAAudioEncoderItf [8.3]

Sets audio encoder parameters.

Object: Media Recorder

SetEncoderSettings	Set audio encoder settings.
GetEncoderSettings	Get audio encoder settings.

XAAudioEncoderCapabilitiesItf [8.4]

Queries audio encoding capabilities of audio engine.

Object: Media Recorder

GetAudioEncoders	Queries supported audio encoders.
GetAudioEncoderCapabilities	Queries for the audio encoder's capabilities.

XAAudioIODeviceCapabilitiesItf [8.5]

Enumerates audio I/O devices and query capabilities of each available audio I/O device.

Object: Engine

GetAvailableAudioInputs	Gets number and IDs of audio input devices.
QueryAudioInputCapabilities	Gets capabilities of specified audio input device.
RegisterAvailableAudioInputsChangedCallback	Sets/clears xaAvailableAudioInputsChangedCallback().
GetAvailableAudioOutputs	Gets number and IDs of audio output devices.
QueryAudioOutputCapabilities	Gets the output capabilities.
RegisterAvailableAudioOutputsChangedCallback	Sets/clears xaAvailableAudioOutputsChangedCallback().
RegisterDefaultDeviceIDMapChangedCallback	Sets/clears xaDefaultDeviceIDMapChangedCallback().
GetAssociatedAudioInputs	Returns array of audio input devices physically associated with this I/O device.
GetAssociatedAudioOutputs	Returns array of audio output devices physically associated with this I/O device.
GetDefaultAudioDevices	Gets the number of audio devices currently mapped to the given default device ID.
QuerySampleFormatsSupported	Gets an array of sample formats supported by the audio I/O device for the given sampling rate.

XACameraItf [8.6]

Queries and configures camera I/O device.

Object: Camera

RegisterCallback	Sets callback for camera event notifications.
SetFlashMode	Sets the camera flash setting.

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XACameraItf (continued)

GetFlashMode	Gets the camera flash setting.
IsFlashReady	Queries if the flash is ready.
SetFocusMode	Sets the focus mode.
GetFocusMode	Gets the focus mode.
SetFocusRegionPattern	Sets the focus region pattern.
GetFocusRegionPattern	Gets the focus region pattern.
GetFocusRegionPositions	Gets focus region pattern position & size.
GetFocusModeStatus	Gets the camera focus status.
SetMeteringMode	Sets exposure metering mode.
GetMeteringMode	Gets exposure metering mode.
SetExposureMode	Sets the exposure mode.
GetExposureMode	Gets the exposure mode.
SetISOsensitivity	Sets the ISO sensitivity.
GetISOsensitivity	Gets the ISO sensitivity.
SetAperture	Sets the aperture.
GetAperture	Gets the aperture.
SetShutterSpeed	Sets the shutter speed.
GetShutterSpeed	Gets the shutter speed.
SetWhiteBalance	Sets the white balance.
GetWhiteBalance	Gets the white balance.
SetAutoLocks	Locks the camera settings.
GetAutoLocks	Gets state of automatic locks.
SetZoom	Sets the zoom factor.
GetZoom	Gets the zoom factor.

XACameraCapabilitiesItf [8.7]

Queries the camera I/O device capabilities.

Object: Engine

GetCameraCapabilities	Queries the device capabilities.
QueryFocusRegionPatterns	Queries focus region patterns.
GetSupportedAutoLocks	Gets number of supported lock combinations.
GetSupportedFocusManualSettings	Gets the supported manual focus settings.
GetSupportedISOsensitivitySettings	Gets the supported manual ISO settings.
GetSupportedApertureManualSettings	Gets the supported manual aperture settings.
GetSupportedShutterSpeedManualSettings	Gets the supported manual shutter speeds.
GetSupportedWhiteBalanceManualSettings	Gets supported manual white balance settings.
GetSupportedZoomSettings	Gets the supported zoom settings.

XAConfigExtensionsItf [8.8]

Sets and queries codec and non-codec configurations of the underlying media engine.

Objects: All

SetConfiguration	Sets configuration as key-value pair.
GetConfiguration	Gets config. setting as key-value pair.

XADeviceVolumeItf [8.9]

Manipulates I/O device-specific volumes.

Object: Engine

GetVolumeScale	Gets the supported volume scale properties.
SetVolume	Sets the volume.
GetVolume	Gets the volume.

XADynamicInterfaceManagementItf [8.10]

Manages interface exposure on a realized object.

Objects: All

AddInterface	Exposes an interface on an object.
RemoveInterface	Removes dynamically exposed interface.
ResumeInterface	Resumes dynamically exposed interface.
RegisterCallback	Registers callback for an interface's events.

XADynamicSourceItf [8.11]

Deprecated. Instead use XADynamicSourceSinkChangeItf

XADynamicSourceSinkChangeItf [8.12]

Changes data source or sink during object lifetime.

Objects: Media Player, Media Recorder, Metadata Extractor

ChangeSource	Changes a specified data source.
ChangeSink	Changes a specified data sink.
RegisterSourceChangeCallback	Sets or clears xaSourceChangeCallback.
RegisterSinkChangeCallback	Sets or clears xaSinkChangeCallback.

XAEngineItf [8.13]

Exposes creation methods of all object types.

Object: Engine

CreateCameraDevice	Creates a camera device.
CreateRadioDevice	Creates a radio device.
CreateLEDDevice	Creates an LED device.
CreateVibraDevice	Creates a vibrator device.
CreateMediaPlayer	Creates a media player.
CreateMediaRecorder	Creates a media recorder.
CreateOutputMix	Creates an output mix.
CreateMetadataExtractor	Creates a Metadata Extractor.
CreateExtensionObject	Creates an externally defined extension object.
GetImplementationInfo	Queries the OpenMAX AL implementation information.
QuerySupportedProfiles	Queries supported profiles.
QueryNumSupportedInterfaces	Queries number of supported interfaces.
QuerySupportedInterfaces	Queries supported interfaces.
QueryNumSupportedExtensions	Queries number of supported extensions.
QuerySupportedExtension	Gets extension name by index.

XAEngineItf and Interfaces continue >

Interfaces (continued)**XAEngineItf (continued)**

IsExtensionSupported	Queries if extension is supported.
QueryLEDCapabilities	Queries LED device capabilities.
QueryVibraCapabilities	Queries vibration device capabilities.

XAEqualizerItf [8.14]

Manipulates equalizer settings.

Objects: Media Player, Media Recorder, Output Mix

SetEnabled	Enables the effect.
IsEnabled	Gets the enabled status of effect.
GetNumberOfBands	Gets number of frequency bands.
GetBandLevelRange	Returns the min/max band levels.
SetBandLevel	Sets a band's gain level.
GetBandLevel	Gets a band's gain level.
GetCenterFreq	Gets a band's center frequency.
GetBandFreqRange	Gets a band's frequency range.
GetBand	Gets the band that affects a frequency the most.
GetCurrentPreset	Gets the current preset.
UsePreset	Sets equalizer according to the given preset.
GetNumberOfPresets	Gets number of presets supported.
GetPresetName	Gets preset name based on index.

XAImageControlsItf [8.15]

Adjusts image or video content.

Objects: Media Player, Media Recorder, Camera

SetBrightness	Sets the brightness level.
GetBrightness	Gets the brightness level.
SetContrast	Sets the contrast level.
GetContrast	Gets the contrast level.
SetGamma	Sets the gamma level.
GetGamma	Gets the gamma level.
GetSupportedGammaSettings	Gets supported gamma settings.

XAImageDecoderCapabilitiesItf [8.16]

Queries an engine's decoding capabilities.

Object: Engine

GetImageDecoderCapabilities	Gets image decoder capabilities.
QueryColorFormats	Queries supported color formats.

XAImageEffectsItf [8.17]

Manages image and video effects.

Objects: Media Player, Media Recorder, Camera

QuerySupportedImageEffects	Queries supported image effects.
EnableImageEffect	Enables an image effect.
DisableImageEffect	Disables an image effect.
IsImageEffectEnabled	Queries if an effect is enabled.

XAImageEncoderItf [8.18]

Sets image encoder parameters.

Object: Media Recorder

SetImageSettings	Sets image encoder settings.
GetImageSettings	Gets image encoder settings.
GetSizeEstimate	Gets estimated image size.

XAImageEncoderCapabilitiesItf [8.19]

Queries the image encoding capabilities.

Object: Engine

GetImageEncoderCapabilities	Gets the image encoder capabilities.
QueryColorFormats	Queries supported color formats.

XALEDArryItf [8.20]

Sets LED array state and color.

Object: LED Array

ActivateLEDArry	Activates/deactivates individual LEDs.
IsLEDArryActivated	Returns the state of each LED.
SetColor	Sets the color of an individual LED.
GetColor	Returns color of an individual LED.

XAMetadataExtractionItf [8.21]

Acquires metadata.

Objects: Media Player, Media Recorder, Metadata Extractor

GetItemCount	Returns the number of metadata items.
GetKeySize	Returns byte size of given metadata key.
GetKey	Returns metadata by key.
GetValueSize	Returns byte size of given metadata value.
GetValue	Returns metadata by value.
AddKeyFilter	Adds a filter for a specific key.
ClearKeyFilter	Clears the key filter.

XAMetadataInsertionItf [8.22]

Inserts/overwrites metadata.

Object: Media Recorder

CreateChildNode	Creates a new child node for the given parent.
GetSupportedKeysCount	Queries number of fixed keys or encodings.
GetKeySize	Returns metadata byte size by index.
GetKey	Returns a XAMetadataInfo structure & associated data referenced by the structure for a supported key.
GetFreeKeysEncoding	Gets character encodings for free keys.
InsertMetadataItem	Inserts metadata key/value pair.
RegisterCallback	Callback for when metadata is written.

XAMetadataMessageItf [8.23]

Sets metadata callbacks during playback.

Objects: Media Player, Metadata Extractor

RegisterMetadataCallback	Sets or clears the metadata callback.
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XAMetadataTraversalItf [8.24]

Manages advanced metadata extraction.

Objects: Media Player, Media Recorder, Metadata Extractor

SetMode	Sets the metadata traversal mode.
GetChildCount	Returns number of child nodes in scope.
GetChildMIMETimeTypeSize	Returns a child's MIME size.
GetChildInfo	Returns information about a child.
SetActiveNode	Sets the scope to a child index.

XAObjectItf [8.25]

Provides essential utility methods for all objects.

Objects: All

Realize	Transitions Unrealized to Realized state.
Resume	Transitions Suspended to Realized state.
GetState	Retrieves the current object state.
GetInterface	Obtains the object's exposed interface.
RegisterCallback	Callback for error or async completion.
AbortAsyncOperation	Aborts asynchronous call in progress.
Destroy	Destroys the object.
SetPriority	Set the object's priority.
GetPriority	Gets the object's priority.
SetLossOfControlInterfaces	Sets/unsets loss of control functionality.

XAOutputMixItf [8.26]

Manages an output mix object.

Object: Output Mix

RegisterDeviceChangeCallback	Callback for changes to the output device IDs.
ReRoute	Changes the specified set of output devices.
GetDestinationOutputDeviceIDs	Gets IDs of associated destination devices

XAPlayItf [8.27]

Controls an object's playback state.

Object: Media Player

SetPlayState	Transitions into given play state.
GetPlayState	Gets player's current play state.
GetDuration	Gets the duration of current content.
GetPosition	Returns the relative position of the playback head.
RegisterCallback	Sets playback callback function.
SetCallbackEventsMask	[En/dis]ables notification of playback events.
GetCallbackEventsMask	Queries the notification state of playback events.
SetMarkerPosition	Sets position of playback marker.
ClearMarkerPosition	Clears marker.
GetMarkerPosition	Queries position of playback marker.
SetPositionUpdatePeriod	Sets position notification interval.
GetPositionUpdatePeriod	Queries position notification interval.

XAPlaybackRateItf [8.28]

Gets and sets the playback rate.

Object: Media Player

SetRate	Sets the rate of presentation.
GetRate	Gets the rate of presentation.
SetPropertyConstraints	Sets rate property constraints.
GetProperties	Gets the current properties.
GetCapabilitiesOfRate	Gets the capabilities of the specified rate.
GetRateRange	Retrieves the ranges of rates supported.

XAPrefetchStatusItf [8.29]

Queries a player's prefetch status.

Object: Media Player

GetPrefetchStatus	Gets the player's current prefetch status.
GetFillLevel	Queries fill level of prefetch.
RegisterCallback	Sets prefetch callback function.
SetCallbackEventsMask	Sets the notification state of the prefetch events.
GetCallbackEventsMask	Queries the notification state of the prefetch events.
SetFillUpdatePeriod	Sets the notification period for fill level updates.
GetFillUpdatePeriod	Queries the notification period for fill level updates.

XARadioItf [8.30]

Controls the analog audio radio.

Object: Radio

SetFreqRange	Sets the frequency range.
GetFreqRange	Gets the frequency range.
IsFreqRangeSupported	Queries if frequency range is supported.
GetFreqRangeProperties	Returns min/max frequencies in range.
SetFrequency	Sets the frequency asynchronously.
CancelSetFrequency	Cancels an outstanding SetFrequency() request.
GetFrequency	Gets the frequency.
SetSquelch	Enables/disables squelch.
GetSquelch	Queries the squelch setting.
SetStereoMode	Sets the stereo mode.
GetStereoMode	Queries the stereo mode.
GetSignalStrength	Returns signal strength in per cents.
Seek	Start a seek from the current frequency.

Interfaces continues >

Interfaces (continued)**XARadioItf (continued)**

StopSeeking	Cancels an outstanding seek request.
GetNumberOfPresets	Returns the number of preset slots.
SetPreset	Sets a preset.
GetPreset	Gets the settings stored into a preset.
RegisterRadioCallback	Sets or clears the xaRadioCallback.

XARDSItf [8.31]

Accesses RDS and RBDS features.

Object: Radio

QueryRDSSignal	Returns the RDS reception status.
GetProgrammeServiceName	Gets the current Programme Service name (PS).
GetRadioText	Gets the current Radio Text (RT).
GetRadioTextPlus	Gets Radio Text+ (RT+) information.
GetProgrammeType	Gets the current Programme Type (PTY) as a number.
GetProgrammeTypeString	Gets the current PTY as a String.
GetProgrammIdentificationCode	Gets the current Programme Identification code (PI).
GetClockTime	Gets current Clock Time & date (CT).
GetTrafficAnnouncement	Gets the status of Traffic Announcement (TA).
GetTrafficProgramme	Gets the status of the Traffic Programme (TP) switch.
SeekByProgrammeType	Seeks for a given PTY.
SeekTrafficAnnouncement	Seeks for a TA.
SeekTrafficProgramme	Seeks for a TP.
SetAutomaticSwitching	Enable/disable PI automatic switching.
GetAutomaticSwitching	Gets the PI automatic switching state.
SetAutomaticTrafficAnnouncement	Enable/disable TA automatic switching.
GetAutomaticTrafficAnnouncement	Gets TA automatic switching state.
GetODAGroup	Gets ODA data by async callback.
SubscribeODAGroup	Subscribes the given ODA group.
UnsubscribeODAGroup	Unsubscribes the given ODA group.
ListODAGroupSubscriptions	Gets subscribed ODA groups.
RegisterODADDataCallback	Sets/clears the xaNewODADDataCallback().
RegisterRDSCallback	Sets/clears the xaRDSCallback().

XARecordItf [8.32]

Controls the recording state of an object.

Object: Media Recorder

SetRecordState	Transitions into the given record state.
GetRecordState	Gets the record state.

continues >

XARecordItf (continued)

SetDurationLimit	Sets the content duration limit.
GetPosition	Returns the recording head position.
RegisterCallback	Registers record callback function.
SetCallbackEventsMask	Sets notification state of record events.
GetCallbackEventsMask	Gets notification state of record events.
SetMarkerPosition	Sets the recording marker position.
ClearMarkerPosition	Clears the recording marker position.
GetMarkerPosition	Queries recording marker position.
SetPositionUpdatePeriod	Sets position notification interval.
GetPositionUpdatePeriod	Gets position notification interval.

XASeekItf [8.33]

Manages playback position and looping.

Object: Media Player

SetPosition	Sets the position of the playback head.
SetLoop	Sets looping parameters.
GetLoop	Query looping parameters.

XASnapshotItf [8.34]

Controls a camera device.

Object: Media Recorder

InitiateSnapshot	Sets parameters prior to TakeSnapshot().
TakeSnapshot	Async take and store snapshot(s).
CancelSnapshot	Cancels an ongoing shooting session.
ReleaseBuffers	Releases a buffer.
GetMaxPicsPerBurst	Gets the max. pictures per burst.
GetBurstFPSRange	Gets possible min/max burst rates.
SetShutterFeedback	Enables/disables shutter feedback.
GetShutterFeedback	Queries if shutter feedback enabled.

XAStreamInformationItf [8.35]

Queries a stream's properties.

Objects: Media Player, Metadata Extractor

QueryMediaContainerInformation	Queries media container information.
QueryStreamType	Queries the stream domain.
QueryStreamInformation	Queries information about the stream.
QueryStreamName	Queries the stream name.
RegisterStreamChangeCallback	Callback for stream change events.
QueryActiveStreams	Returns the active state for all streams.
SetActiveStream	Sets/unsets a stream's active state.

XAThreadSyncItf [8.36]

Manages thread synchronization.

Object: Engine

EnterCriticalSection	Transitions the engine into critical section state.
ExitCriticalSection	Transitions into non-critical section state.

XAVibraItf [8.37]

Manages the Vibra I/O device.

Object: Vibra

Vibrate	Activates or deactivates vibration.
IsVibrating	Returns whether I/O device is vibrating.
SetFrequency	Sets the vibration frequency.
GetFrequency	Returns the vibration frequency.
SetIntensity	Sets the vibration intensity.
GetIntensity	Returns the vibration intensity.

XAVideoDecoderCapabilitiesItf [8.38]

Queries the video decoding capabilities.

Object: Engine

GetVideoDecoders	Retrieves available video decoders.
GetVideoDecoderCapabilities	Retrieves video decoder capabilities.

XAVideoEncoderItf [8.39]

Sets video encoder parameters.

Object: Media Recorder

SetVideoSettings	Sets the video encoder settings.
GetVideoSettings	Gets the video encoder settings.

XAVideoEncoderCapabilitiesItf [8.40]

Queries the video encoding capabilities.

Object: Engine

GetVideoEncoders	Retrieves available video encoders.
GetVideoEncoderCapabilities	Retrieves video encoder capabilities.

XAVideoPostProcessingItf [8.41]

Manages video post-processing.

Objects: Media Player, Media Recorder, Camera

SetRotation	Sets the rotation options.
IsArbitraryRotationSupported	Queries if arbitrary rotation is supported.
SetSourceRectangle	Defines a source rectangle.
SetDestinationRectangle	Defines destination rectangle.
SetScaleOptions	Sets the scaling options.
SetMirror	Sets the mirroring options.
Commit	Commits changes since last Commit().

XAVolumeItf [8.42]

Manages audio volume of the object.

Objects: Media Player, Media Recorder, Output Mix

SetVolumeLevel	Sets the volume level.
GetVolumeLevel	Gets the volume level.
GetMaxVolumeLevel	Gets maximum supported level.
SetMute	Mutes or unmutes object.
GetMute	Gets the mute state.
EnableStereoPosition	[En/dis]ables the stereo positioning effect.
IsEnabledStereoPosition	Returns the stereo positioning enabled state.
SetStereoPosition	Sets stereo position (pan/balance).
GetStereoPosition	Gets stereo position setting.

Structures**XAAudioCodecDescriptor [9.1.1]**

Audio codec capabilities.

XAAudioEncoderSettings [9.1.2]

Set the audio encoding parameters.

XAAudioInputDescriptor [9.1.3]

Return the description of audio input device capabilities.

XAAudioOutputDescriptor [9.1.4]

Return the description of audio output device capabilities.

XAAudioStreamInformation [9.1.5]

Audio stream information.

XACameraDescriptor [9.1.6]

Query the camera capabilities.

XADDataFormat_MIME [9.1.7]

Describes a MIME type.

XADDataFormat_PCM [9.1.8]

Deprecated. Instead use XADDataFormat_PCM_EX.

XADDataFormat_PCM_EX [9.1.9]

Describes audio PCM parameters.

XADDataFormat_RawImage [9.1.10]

Describes the raw image format.

XADDataLocator_Address [9.1.11]

A data locator for a memory address.

Structures continues >

Structures (continued)**XADDataLocator_ContentPipe [9.1.12]**

A data locator for a content pipe.

XADDataLocator_IODevice [9.1.13]

A data locator for an I/O device.

XADDataLocator_MediaObject [9.1.14]

A data locator for a media object.

XADDataLocator_NativeDisplay [9.1.15]

A data locator for a native display.

XADDataLocator_Null [9.1.16]

A null data locator used in conjunction with XADynamicSourceSinkChangeltf.

XADDataLocator_OutputMix [9.1.17]

A data locator for an output mix.

XADDataLocator_URI [9.1.18]

A data locator for a URI.

XADDataSink [9.1.19]

A data sink by locator and format.

XADDataSource [9.1.20]

A data source by locator and format.

XAEngineOption [9.1.21]

Engine creation options.

XAFocusPointPosition [9.1.22]

Camera focus region.

XAHS� [9.1.23]

A color defined in HSL color space.

XAImageCodecDescriptor [9.1.24]

Image codec capabilities.

XAImageSettings [9.1.25]

Image encoding parameters.

XAImageStreamInformation [9.1.26]

Image stream information.

XAInterfaceID [9.1.27]

The interface ID type.

XALEDDescriptor [9.1.28]

Represents the capabilities of the LED array I/O Device.

XAMediaContainerInformation [9.1.29]

Media container information.

XAMetadataInfo [9.1.30]

A key or a value from a metadata item key/value pair.

XAMIDIStreamInformation [9.1.31]

MIDI stream information.

XANativeHandle [9.1.32]

Opaque handle to a display or window.

XARectangle [9.1.33]

Specifies a rectangle.

XATimedTextStreamInformation [9.1.34]

Timed text stream information.

XAVendorStreamInformation [9.1.35]

Vendor-specific stream information.

XAVibraDescriptor [9.1.36]

Vibra I/O device capabilities.

XAVideoCodecDescriptor [9.1.37]

Video codec capabilities.

XAVideoSettings [9.1.38]

Video encoding parameters.

XAVideoStreamInformation [9.1.39]

Video stream information.

Macros**XA_API [9.2.1]**

A platform-specific macro to declare OpenMAX AL function prototypes.

XAAPIENTRY [9.2.2]

A system-dependent API entry point macro to indicate the required calling conventions for global functions.

XA_AUDIOCODEC_* [9.2.3]

The audio encoding type.

PCM, MP3, AMR, AMRWB, AMRWBPLUS, AAC, WMA, REAL, Vorbis

XA_AUDIOPROFILE_* and XA_AUDIOMODE_* [9.2.4]

Audio profiles and modes.

XA_AUDIOSTREAMFORMAT_UNDEFINED

PCM Profiles and Modes

XA_AUDIOPROFILE_PCM

MP3 Profiles and ModesXA_AUDIOPROFILE_MPEG{1, 2, 25}_L3,
XA_AUDIOCHANMODE_MP3_MONO,
XA_AUDIOCHANMODE_MP3_STEREO,
XA_AUDIOCHANMODE_MP3_JOINTSTEREO,
XA_AUDIOCHANMODE_MP3_DUAL**AMR Profiles and Modes**XA_AUDIOPROFILE_AMR
XA_AUDIOSTREAMFORMAT_CONFORMANCE
XA_AUDIOSTREAMFORMAT_IF1, IF2, FSF
XA_AUDIOSTREAMFORMAT RTPPAYLOAD
XA_AUDIOSTREAMFORMAT_ITU**AMR-WB Profiles and Modes**

XA_AUDIOPROFILE_AMRWB

AMR-WB+ Profiles and Modes

XA_AUDIOPROFILE_AMRWBPLUS

AAC Profiles and ModesXA_AUDIOPROFILE_AAC_AAC
XA_AUDIOMODE_AAC_{LC, SSR, LTP, HE, HE_PS,
HE_MPS, MAIN, SCALABLE, ERLC, LD},
XA_AUDIOSTREAMFORMAT_MP4ADTS, LOAS, LATM}
XA_AUDIOSTREAMFORMAT_{MP2ADTS, ADIF, MP4FF, RAW}**Windows Media Audio Profiles and Modes**XA_AUDIOPROFILE_WMA{7, 8, 9, 10}
XA_AUDIOMODE_WMA_LEVEL{1, 2, 3, 4}
XA_AUDIOMODE_WMAPRO_LEVELM{0, 1, 2, 3}**RealAudio Profiles and Levels**XA_AUDIOPROFILE_REALAUDIO
XA_AUDIOMODE_REALAUDIO_{G2, 8, 10, SURROUND}**Vorbis Profiles and Levels**

XA_AUDIOPROFILE_VORBIS, XA_AUDIOMODE_VORBIS

XA_BOOLEAN_* [9.2.5]

Canonical values for Boolean type.

FALSE, TRUE

XA_BYTEORDER_* [9.2.6]

The byte order of 16-, 32-, or 64-bit data.

BIGENDIAN, LITTLEENDIAN, NATIVE

XA_CAMERA_APERTUREMODE_* [9.2.7]

Camera aperture setting.

MANUAL, AUTO

XA_CAMERA_AUTOEXPOSURESTATUS_* [9.2.8]

Automatic exposure status.

SUCCESS, UNDEREXPOSURE, OVEREXPOSURE

XA_CAMERACBEVENT [9.2.9]

Camera callback event.

ROTATION, FLASHREADY, FOCUSSTATUS, EXPOSURESTATUS,
WHITEBALANCELOCKED, ZOOMSTATUS**XA_CAMERACAP_* [9.2.10]**

Camera capabilities.

FLASH, AUTOFOCUS, CONTINUOUSAUTOFOCUS,
MANUALFOCUS, AUTOEXPOSURE, MANUALEXPOSURE,
AUTOISOSENSITIVITY, MANUALISOSENSITIVITY,
AUTOAPERTURE, MANUALAPERTURE,
AUTOSHUTTERSPEED, MANUALSHUTTERSPEED,
AUTOWHITEBALANCE, MANUALWHITEBALANCE,
OPTICALZOOM, DIGITALZOOM, METERING, BRIGHTNESS,
CONTRAST, GAMMA**XA_CAMERA_EXPOSUREMODE_* [9.2.11]**

Camera exposure mode.

MANUAL, AUTO, NIGHT, BACKLIGHT, SPOTLIGHT, SPORTS,
SNOV, BEACH, LARGEAPERTURE, SMALLAPERTURE,
PORTRAIT, NIGHTPORTRAIT**XA_CAMERA_FLASHMODE_* [9.2.12]**

Camera flash mode.

OFF, ON, AUTO, REDEYEREDUCTION,
REDEYEREDUCTION_AUTO, FILLIN, TORCH**XA_CAMERA_FOCUSMODE_* [9.2.13]**

Camera focus mode.

MANUAL, AUTO, CENTROID, CONTINUOUS_AUTO,
CONTINUOUS_CENTROID**XA_CAMERA_FOCUSMODESTATUS_* [9.2.14]**

Camera focus mode status.

OFF, REQUEST, REACHED, UNABLETOREACH, LOST

XA_CAMERA_ISOSENSITIVITYMODE_* [9.2.15]

Camera ISO sensitivity.

MANUAL, AUTO

XA_CAMERA_LOCK_* [9.2.16]

Locks for camera settings.

AUTOFOCUS, AUTOEXPOSURE, AUTOWHITEBALANCE

XA_CAMERA_METERINGMODE_* [9.2.17]

Camera metering mode.

AVERAGE, SPOT, MATRIX

XA_CAMERA_SHUTTERSPEEDMODE_* [9.2.18]

Camera shutter speed mode.

MANUAL, AUTO

XA_CAMERA_WHITEBALANCEMODE_* [9.2.19]

White balance settings.

MANUAL, AUTO, SUNLIGHT, CLOUDY, SHADE, TUNGSTEN,
FLUORESCENT, INCANDESCENT, FLASH, SUNSET**XA_CAMERA_ZOOM_* [9.2.20]**

Hint for XACameraItf::SetZoom.

SLOW, NORMAL, FAST, FASTEST

XA_CHARACTERENCODING_* [9.2.21]

Metadata character encoding.

UNKNOWN, BINARY, ASCII, BIG5, CODEPAGE1252,
GB2312, HZGB2312, GB12345, GB18030, GBK,
IMAPUTF7, ISO2022JP, ISO2022JP1, ISO88591, ISO885910,
ISO885913, ISO885914, ISO885915, ISO88592, ISO88593,
ISO88594, ISO88595, ISO88596, ISO88597, ISO88598,
ISO88599, ISOEUCJP, SHIFTHS, SMS7BIT, UTF7, UTF8,
JAVACONFORMANTUTF8, UTF16BE, UTF16LE**XA_COLORFORMAT_* [9.2.22]**

Pixel color format.

UNUSED, MONOCHROME, 8BITRGB332, 12BITRGB444,
16BITARGB4444, 16BITARGB1555, 16BITRGB565,
16BITBGR565, 18BITRGB666, 18BITARGB1665,

XA_COLORFORMAT_* continues >

Macros (continued)**XA_COLORFORMAT_* [continued]**

19BITARGB1666, 24BITRGB888, 24BITBGR888, 24BITARGB1887, 25BITARGB1888, 32BITBGR888, 32BITARGB8888, YUV411PLANAR, YUV420PLANAR, YUV420SEMIPLANAR, YUV422PLANAR, YUV422SEMIPLANAR, YCBCR, YCRYCB, CBYCRY, CRYCBY, YUV444INTERLEAVED, RAWBAYER8BIT, RAWBAYER10BIT, RAWBAYER8BITCOMPRESSED, L2, L4, L8, L16, L24, L32, 18BITBGR666, 24BITARGB666, 24BITBGR666

XA_CONTAINERTYPE_* [9.2.23]

The data source or sink container type.

UNSPECIFIED, RAW, ASF, AVI, BMP, JPG, JPG2000, M4A, MP3, MP4, MPEG_ES, MPEG_PS, MPEG_TS, QT, WAV, XMF_0, XMF_1, XMF_2, XMF_3, XMF_GENERIC, AMR, AAC, 3GPP, 3GA, RM, DMF, SMF, MOBILE_DLS, OGG

XA_DATAFORMAT_* [9.2.24]

The possible data formats.

MIME, PCM, RAWIMAGE, PCM_EX

XA_DATALOCATOR_* [9.2.25]

The possible data locators.

NULL, URI, ADDRESS, IODEVICE, OUTPUTMIX, NATIVEDISPLAY, RESERVED6, RESERVED7, MEDIAOBJECT, CONTENTPIPE

XA_DEFAULTDEVICEID_* [9.2.26]

Default device IDs.

AUDIOINPUT, AUDIOOUTPUT, LED, VIBRA, CAMERA

XA_DEVICECONNECTION_* [9.2.27]

Types of I/O device connections.

INTEGRATED, ATTACHED_{WIRED, WIRELESS}, NETWORK

XA_DEVICELOCATION_* [9.2.28]

I/O device locations.

HANDSET, HEADSET, CARKIT, DOCK, REMOTE

XA_DEVICESCOPE_* [9.2.29]

I/O device scopes.

UNKNOWN, ENVIRONMENT, USER

XA_DOMAINTYPE_* [9.2.30]

Functional domain.

AUDIO, VIDEO, IMAGE, TIMEDTEXT, MIDI, VENDOR, UNKNOWN

XA_DYNAMIC_ITF_EVENT_* [9.2.31]

Dynamic interface events.

RUNTIME_ERROR, ASYNC_TERMINATION, RESOURCES_{AVAILABLE, LOST, LOST_PERMANENTLY}

XA_ENGINEOPTION_* [9.2.32]

Engine object creation options (see `xaCreateEngine()`).

THREADSAFE, LOSSOFCONTROL

XA_EQUALIZER [9.2.33]

Undefined equalizer setting.

XA_EQUALIZER_UNDEFINED

XA_FOCUSPOINTS_* [9.2.34]

Camera focus point pattern.

ONE, THREE_3X1, FIVE_CROSS, SEVEN_CROSS, NINE_SQUARE, ELEVEN_CROSS, TWELVE_3X4, TWELVE_4X3, SIXTEEN_SQUARE, CUSTOM

XA_FREQRANGE_* [9.2.35]

Frequency range and modulation.

FMEUROAMERICA, FMJAPAN, AMLW, AMMW, AMSW

XA_IMAGECODEC_* [9.2.36]

Image encoding format.

JPEG, GIF, BMP, PNG, TIFF, RAW

XA_IMAGEEFFECT_* [9.2.37]

The image effect type.

MONOCHROME, NEGATIVE, SEPIA, EMBOSS, PAINTBRUSH, SOLARIZE, CARTOON

XA_IODEVICE_* [9.2.38]

I/O device sources and sinks.

AUDIOINPUT, LEDARRAY, VIBRA, CAMERA, RADIO, AUDIOOUTPUT

XA_METADATA_FILTER_* [9.2.39]

Bit-masks for metadata filtering criteria.

KEY, LANG, ENCODING

XA_METADATATRAVERSALMODE_* [9.2.40]

Method of traversing metadata.

ALL, NODE

XA_MIDIBANK_* [9.2.41]

MIDI instrument bank(s) used.

DEVICE, CUSTOM

XA_MIDI_UNKNOWN [9.2.42]

Value for unknown MIDI stream attribute.

XA_MIDI_UNKNOWN

XA_MILLIBEL_* [9.2.43]

Limit values for millibel units.

MIN, MAX

XA_MILLIHERTZ_MAX [9.2.44]

Limit value for millihertz unit.

XA_MILLIHERTZ_MAX

XA_MILLIMETER_MAX [9.2.45]

Limit value for millimeter unit.

XA_MILLIMETER_MAX

XA_NODE_PARENT [9.2.46]

Used to set the current scope to the node's parent.

XA_NODE_PARENT

XA_NODETYPE_* [9.2.47]

The type of a node.

UNSPECIFIED, AUDIO, VIDEO, IMAGE

XA_OBJECT_EVENT_* [9.2.48]

Object event notifications.

RUNTIME_ERROR, ASYNC_TERMINATION, RESOURCES_{LOST, AVAILABLE}, ITF_CONTROL_{TAKEN, RETURNED}, ITF_PARAMETERS_CHANGED

XA_OBJECT_STATE_* [9.2.49]

Object states.

UNREALIZED, REALIZED, SUSPENDED

XA_OBJECTID_* [9.2.50]

Object type identifiers.

ENGINE, LEDDEVICE, VIBRADEVICE, MEDIAPLAYER, MEDIARECORDER, RADIODEVICE, OUTPUTMIX, METADATAEXTRACTOR, CAMERADVICE

XA_ORIENTATION_* [9.2.51]

Device orientation relative to the user.

UNKNOWN, OUTWARDS, INWARDS

XA_PCM_REPRESENTATION_* [9.2.52]

PCM data type.

SIGNED_INT, UNSIGNED_INT, FLOAT

XA_PCMSAMPLEFORMAT_* [9.2.53]

Audio device sample formats.

FIXED_8, FIXED_16, FIXED_20, FIXED_24, FIXED_28, FIXED_32, FIXED_64

XA_PLAYEVENT_* [9.2.54]

Play events.

HEADATEND, HEADATMARKER, HEADATNEWPOS, HEADMOVING, HEADSTALLED, DURATIONUPDATED

XA_PLAYSTATE_* [9.2.55]

Playback state.

STOPPED, PAUSED, PLAYING

XA_PREFETCHEVENT_* [9.2.56]

Prefetch related events.

STATUSCHANGE, FILLLEVELCHANGE

XA_PREFETCHSTATUS_* [9.2.57]

Player's prefetch status.

UNDERFLOW, SUFFICIENTDATA, OVERFLOW

XA_PRIORITY_* [9.2.58]

Priority levels.

LOWEST, VERYLOW, LOW, BELOWNORMAL, NORMAL, ABOVENORMAL, HIGH, VERYHIGH, HIGHEST

XA_PROFILE_* [9.2.59]

The OpenMAX AL API profiles.

MEDIA_PLAYER, MEDIA_PLAYER_RECORDER, PLUS_MIDI

XA_RADIO_EVENT_* [9.2.60]

Events for `xaRadioCallback()`.

ANTENNA_STATUS_CHANGED, FREQUENCY_CHANGED, FREQUENCY_RANGE_CHANGED, PRESET_CHANGED, SEEK_COMPLETED, STEREO_STATUS_CHANGED, SIGNAL_STRENGTH_CHANGED, SQUELCH_CHANGED, FREQUENCY_ERROR, FREQUENCY_RANGE_ERROR

XA_RATECONTROLMODE_* [9.2.61]

Rate control mode.

CONSTANTBITRATE, VARIABLEBITRATE

XA_RATEPROP_* [9.2.62]

Object rate-related properties.

STAGGEREDVIDEO, SMOOTHVIDEO, SILENTAUDIO, STAGGEREDAUDIO, NOPITCHCORAUDIO, PITCHCORAUDIO

XA_RDS_EVENT_NEW_* [9.2.63]

RDS field change event.

PI, PTY, PS, RT, RT_PLUS, CT, TA, TP, ALARM

XA_RDSPROGRAMMETYPE_* [9.2.64]

RDS Program TType code (PTY).

RDSPTY_{NONE, NEWS, CURRENTAFFAIRS, INFORMATION, SPORT, EDUCATION, DRAMA, CULTURE, SCIENCE, VARIEDSPEECH, POPMUSIC, ROCKMUSIC, EASYLISTENING, LIGHTCLASSICAL, SERIOUSCLASSICAL, OTHERMUSIC, WEATHER, FINANCE, CHILDRENSPROGRAMMES, SOCIALAFFAIRS, RELIGION, PHONEIN, TRAVEL, LEISURE, JAZZMUSIC, COUNTRYMUSIC, NATIONALMUSIC, OLDIESMUSIC, FOLKMUSIC, DOCUMENTARY, ALARMTTEST, ALARM}

RBDSPY_{NONE NEWS, INFORMATION, SPORTS, TALK, ROCK, CLASSICROCK, ADULTHITS, SOFTROCK, TOP40, COUNTRY, OLDIES, SOFT, NOSTALGIA, JAZZ, CLASSICAL, RHYTHMANDBLUES, SOFTRHYTHMANDBLUES, LANGUAGE, RELIGIOUSMUSIC, RELIGIOUSTALK, PERSONALITY, PUBLIC, COLLEGE, UNASSIGNED1, UNASSIGNED2, UNASSIGNED3, UNASSIGNED4, UNASSIGNED5, WEATHER, EMERGENCYTEST, EMERGENCY}

Macros continues >

Macros (continued)

XA_RDSRTPLUS * [9.2.65]

RDS RT+ content class code.

ITEMTITLE, ITEMALBUM, ITEMTRACKNUMBER, ITEMARTIST, ITEMCOMPOSITION, ITEMMOVEMENT, ITEMCONDUCTOR, ITEMCOMPOSER, ITEMABAND, ITEMCOMMENT, ITEMGENRE, INFONEWS, INFONEWSLOCAL, INFOSTOCKMARKET, INFOSPORT, INFOLOTTERY, INFOHOROSCOPE, INFOADAILYDIVERSION, INFOHEALTH, INFOEVENT, INFOZONE, INFOCINEMA, INFOFOTV, INFODATETIME, INFOWEATHER, INFOTRAFFIC, INFOALARM, INFOADVERTISEMINT, INFOURL, INFOOTHER, STATIONNAMESHORT, STATIONNAMESLONG, PROGRAMNOW, PROGRAMNEXT, PROGRAMPART, PROGRAMHOST, PROFRAMEDITORIALSTAFF, PROGRAMFREQUENCY, PROGRAMHOMEPAGE, PROGRAMSUBCHANNEL, PHONEHOTLINE, PHONESTUDIO, PHONEOTHER, SMSSTUDIO, SMSOTHER, EMAILHOTLINE, EMAILSTUDIO, EMAILOTHER, MMSOTHER, CHAT, CHATCENTER, VOTEQUESTION, VOTECENTER, OPENCLASS45, OPENCLASS55, OPENCLASS56, OPENCLASS57, OPENCLASS58, PLACE, APPOINTMENT, IDENTIFIER, PURCHASE, GETDATA

XA_RECORDEREVENT * [9.2.66]

Record events.

HEADATLIMIT, HEADATMARKER, HEADATNEWPOS, HEADMOVING, HEADSTALLED, BUFFER_FULL

XA_RECORDSTATE * [9.2.67]

Object recording state.

STOPPED, PAUSED, RECORDING

XA_RENDERINGHINT * [9.2.68]

Hint for XAVideoPostProcessingItf.

NONE, ANTIALIASING

XA_RESULT * [9.2.69]

Method return values.

SUCCESS, PRECONDITIONS_VIOLATED, PARAMETER_INVALID, MEMORY_FAILURE, RESOURCE_{ERROR, LOST}, IO_ERROR, BUFFER_INSUFFICIENT, CONTENT_CORRUPTED, CONTENT_{UNSUPPORTED, NOT_FOUND},

continues >

XA_RESULT * (continued)

PERMISSION_DENIED, FEATURE_UNSUPPORTED, {INTERNAL, UNKNOWN}_ERROR, OPERATION_ABORTED, CONTROL_LOST, READONLY, ENGINEOPTION_UNSUPPORTED, SOURCE_SINK_INCOMPATIBLE

XA_ROOT_NODE_ID [9.2.70]

Root node of the metadata tree.

XA_ROOT_NODE_ID

XA_SAMPLINGRATE * [9.2.71]

Common audio sampling rates.

8, 11_025, 12, 16, 22_05, 24, 32, 44_1, 48, 64, 88_2, 96, 192

XA_SEEKMODE * [9.2.72]

Seek modes.

FAST, ACCURATE

XA_STEREO_MODE * [9.2.73]

Stereo mode.

MONO, STEREO, AUTO

XA_SPEAKER * [9.2.74]

Speaker locations used when specifying channel mask.

FRONT_{LEFT, RIGHT, CENTER}, LOW_FREQUENCY, BACK_{LEFT, RIGHT, CENTER}, FRONT_{LEFT, RIGHT}_OF_CENTER, SIDE_{LEFT, RIGHT}, TOP_CENTER, TOP_FRONT_{LEFT, CENTER, RIGHT}, TOP_BACK_{LEFT, CENTER, RIGHT}

XA_STREAMCBEVENT * [9.2.75]

Stream callback event type.

XA_STREAMCBEVENT_PROPERTYCHANGE

XA_TIME [9.2.76]

Out of range playback time.

XA_TIME_UNKNOWN

XA_VIDEOCODEC * [9.2.77]

Video encoding format.

MPEG2, H263, MPEG4, AVC, VC1, VP8

XA_VIDEOMIRROR * [9.2.78]

Mirroring option for XAVideoPostProcessingItf.

NONE, VERTICAL, HORIZONTAL, BOTH

XA_VIDEOPROFILE * and XA_VIDEOLEVEL * [9.2.79]

Video profiles and levels.

MPEG-2 Profiles and Levels

XA_VIDEOPROFILE_MPEG2_{SIMPLE, MAIN, 422, SNR, SPATIAL, HIGH}

XA_VIDEOLEVEL_MPEG2_{LL, ML, H14, HL}

H.263 Profiles and Levels

XA_VIDEOPROFILE_H263_{BASELINE, H320CODING, BACKWARDCOMPATIBLE, ISWV2, ISWV3, HIGHCOMPRESSION, INTERNET, INTERLACE, HIGHLATENCY}

XA_VIDEOLEVEL_H263_{10, 20, 30, 40, 45, 50, 60, 70}

MPEG-4 Profiles and Levels

XA_VIDEOPROFILE_MPEG4_{SIMPLE, SIMPLESCALABLE, CORE, MAIN, NBIT, SCALABLETEXTURE, SIMPLEFACE, SIMPLEFBA, BASICANIMATED, HYBRID, ADVANCEDREALTIME, CORESCALABLE, ADVANCEDCODING, ADVANCEDCORE, ADVANCEDSCALABLE}

XA_VIDEOLEVEL_MPEG4_{0, 0b, 1, 2, 3, 4, 4a, 5}

AVC Profiles and Levels

XA_VIDEOPROFILE_AVC_{BASELINE, MAIN, EXTENDED, HIGH, HIGH10, HIGH422, HIGH444}

XA_VIDEOLEVEL_AVC_{1, 1B, 11, 12, 13, 2, 21, 22, 3, 31, 32, 4, 41, 42, 5, 51}

VC-1 Profiles and Levels

XA_VIDEOPROFILE_VC1_{SIMPLE, MAIN, ADVANCED}

XA_VIDEOLEVEL_VC1_{LOW, MEDIUM, HIGH, L0, L1, L2, L3, L4}

VP8 Profiles and Levels

XA_VIDEOPROFILE_VP8_MAIN

XA_VIDEOLEVEL_VP8_VERSION{0, 1, 2, 3}

XA_VIDEOSCALE * [9.2.80]

Scaling option for XAVideoPostProcessingItf.

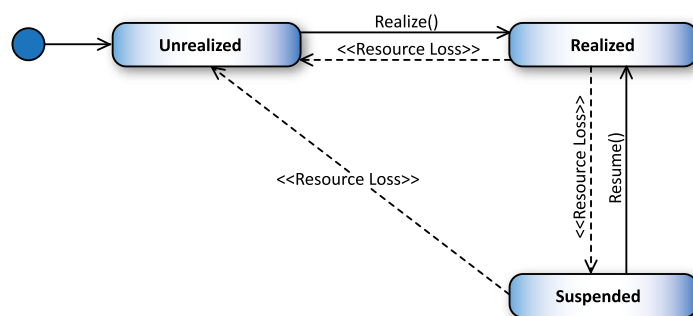
STRETCH, FIT, CROP

Object State Diagram [3.1.1]

This diagram illustrates the object states and state transitions. When the application destroys an object, the object implicitly transitions through the Unrealized state. During the transition, it frees its resources and makes them available to other objects. Every object maintains a state machine with the following states:

- Unrealized (initial state):** The object is alive but has not yet allocated any resources. It is not usable, and its interfaces' methods cannot be called.
- Realized:** The object's resources are allocated and the object is usable.
- Suspended (optional state):** The object has fewer resources than required to be usable, but it maintains the state it was in at the time of suspension. The system has the option of putting an object either in the Suspended state or the Unrealized state when resources are insufficient.

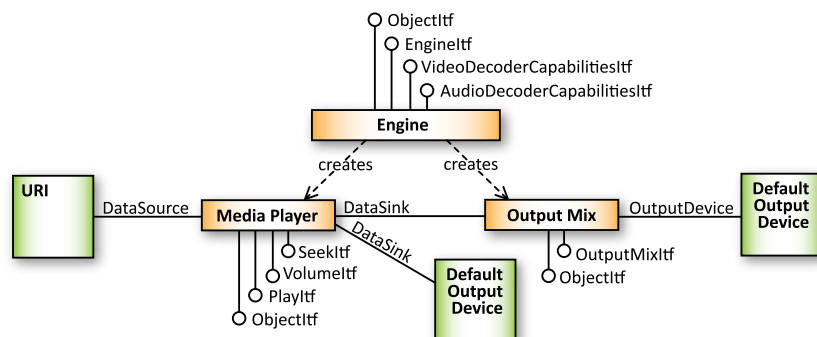
---> System-induced transitions --> Client-induced transitions



Use Case: Audio and Video Playback [4.7.1]

This illustrates the use of the Media Player object for audio and video playback. The support for this use case is mandated in all profiles.

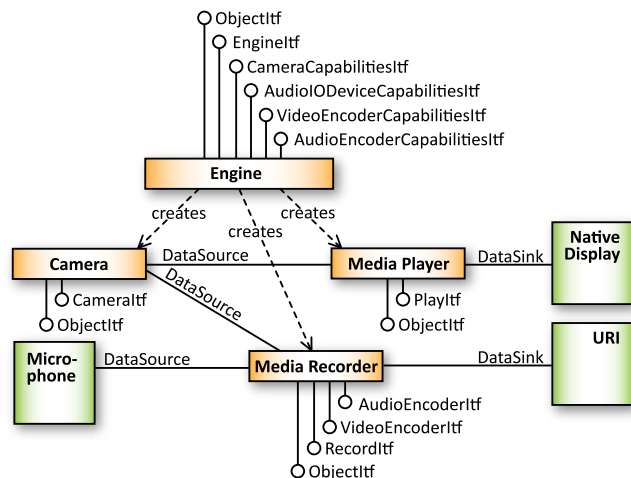
A Media Player is created using the XAEngineItf interface of the engine object. Upon creation, the Media Player is associated with an Output Mix, created using the XAEngineItf interface, for audio output and with a native display handle for video output. The data source of the Media Player is also set during creation. The data source could be, for example, a URI pointing to a video file in the local file system. The Output Mix is by default associated with the system-dependent default output device.



Use Case: Video Camera [4.7.5]

This illustrates the use of the Media Recorder object for recording and a Media Player for the viewfinder. The support for this use case is mandated only in the Media Player/Recorder profile.

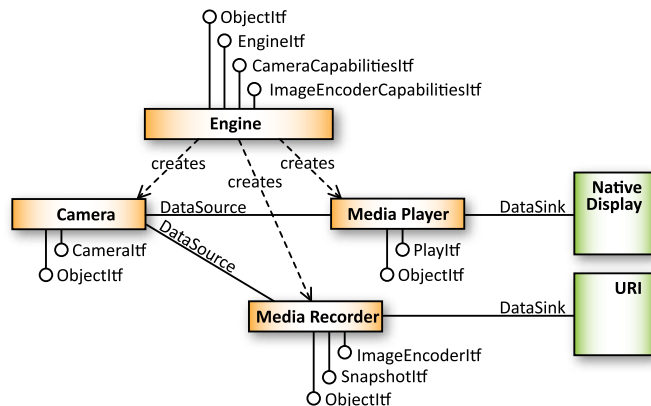
The Media Recorder and Media Player objects are created using the XAEngineItf interface of the engine object. Upon creation, both objects are associated with the same Camera object, created using the XAEngineItf interface. The audio data source of the Media Recorder is set to be a microphone (an audio input device). The data sink for the Media Player is a native window or display handle (as it was in the previous video playback use case). The data sink of the Media Recorder can be a URI pointing to a video file in the local file system where the data will be recorded.



Use Case: Still Camera [4.7.6]

The still camera use case is similar to the video camera use case except the Media Recorder exposes different interfaces. The support for this use case is mandated only in the Media Player/Recorder profile.

The Media Recorder object provides the XASnapshotItf interface for still image capture and XAImageEncoderItf for the image encoder settings (instead of the XARecordItf and XAVideoEncoderItf interfaces respectively).

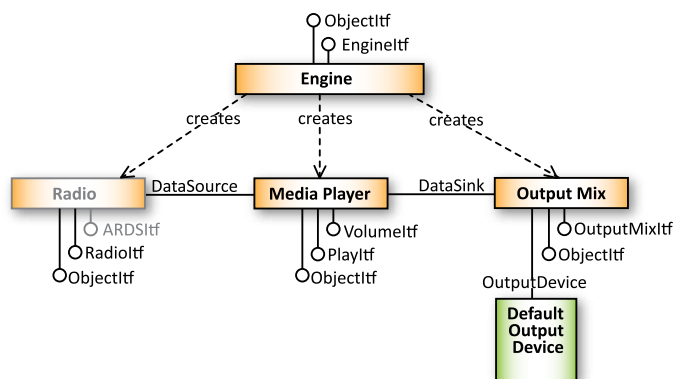


Use Case: Radio Playback [4.7.7]

This illustrates the use of the Media Player object for radio playback. The support for this use case is optional in all profiles since support for Radio I/O device object is optional.

As always, the Media Player is created using the XAEngineItf interface of the engine object. Upon creation, the Media Player is associated with an Output Mix, created using the XAEngineItf interface, for audio output. By default, OpenMAX AL automatically associates the Output Mix with the system-dependent default output device. During the creation, the Radio I/O device, created using the XAEngineItf interface, is set as the data source.

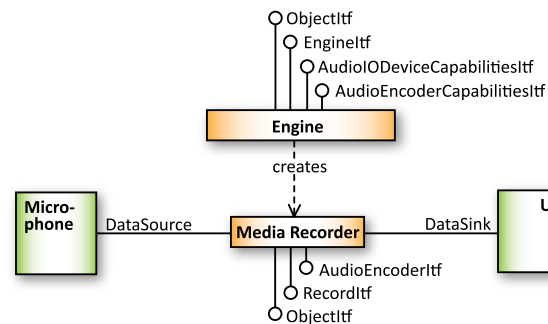
Optional interfaces and objects with grey color.



Use Case: Recording Audio [4.7.3]

This illustrates the use of the Media Recorder object for recording audio. The support for this use case is mandated only in the Media Player/Recorder profile.

The Audio Recorder is created using the XAEngineItf interface of the engine object. Upon creation, it is associated with an audio data source, which can be, for example, a microphone (an audio input device). The data sink of the Media Recorder can be a URI pointing to an audio file in the local file system on which the audio will be recorded.



Use Case: Reading Metadata [4.7.8]

A Metadata Extractor object will read the metadata of a media file without allocating resources for audio playback. The support for this use case is mandated in all profiles.

The Metadata Extractor object is created using XAEngineItf interface of the engine object and, upon creation, its data source is set. The data source is typically a URI pointing to a media file in the local file system. However, the Metadata Extractor supports the XADynamicSourceSinkChangeItf interface which can be used to change the data source dynamically. Therefore metadata from multiple files (in series) can be extracted without creating a new Metadata Extractor object for every single file. The XAMetadataExtractionItf and XAMetadataTraversalItf interfaces are used for actually reading and traversing the metadata from a file. The XAMetadataMessageItf interface is used to set callbacks that execute whenever a metadata item is encountered.

