OnStream MediaPlayer+ Player SDK Migration Guide on Android Platform

API Version 2 to API Version 3

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1 About This Manual

1.1 Overview

This application guide provides a reference to assist developers in upgrading VisualOn®
OnStream® MediaPlayer+ (referred hereafter to as OSMP+) API Version 2 (V2) to OSMP+
API Version 3 (V3).

1.2 Related Documents

The following documents that are located under the Doc directory in your installation
package provide additional information related to this application guide:

- *API Reference Manual.zip*
- *OnStream MediaPlayer+.Player SDK Integration Guide for Android.pdf*
- *OnStream MediaPlayer+.SDK Project Setup for Android.pdf*
- *OnStream MediaPlayer+.Player API Upgrade AG.pdf*

2   General Migration

2.1   Minimum Android SDK Support

The V3.15 SDK release requires a minimum Android API level 8 and Android 2.3 or above. For more information on setting the minimum required SDK for Android project, refer to the *OnStream MediaPlayer+ SDK Project Setup for Android* document.

2.2   SDK Package Changes

API V2 release uses the following package structure:
- com.visualon.OSMPBasePlayer
- com.visualon.OSMPHDMICheck
- com.visualon.OSMPSubTitle
- com.visualon.OSMPUtils

API V3 release uses the following package structure:
- com.visualon.OSMPPlayer.VOCommonPlayer
  - com.visualon.OSMPPlayer.VOCommonPlayerStatus
  - com.visualon.OSMPPlayer.VOCommonPlayerControl
  - com.visualon.OSMPPlayer.VOCommonPlayerConfiguration
  - com.visualon.OSMPPlayer.VOCommonPlayerRTSPConfiguration
  - com.visualon.OSMPPlayer.VOCommonPlayerHTTPConfiguration
  - com.visualon.OSMPPlayer.VOCommonPlayerPlayerAssetSelection
  - com.visualon.OSMPPlayer.VOCommonPlayerSubtitle
  - com.visualon.OSMPPlayer.VOCommonPlayerDeviceInfo

3   API Migration

API V3 includes the following general changes and updates:
- Naming conventions have been modified for consistency across platforms
- Parameters and return types have been updated to use SDK types to improve clarity
- Time-related parameters and return values have been increased to long integers
- Methods returning void now return `VO_OSMP_RETURN_CODE`

See Table 1 for the detailed information about method updates. For more information about the new methods in API V3, refer to the *API Reference Manual.zip* file.

Table 1: Detailed method updates

API V2	API V3	Comment
`int Init()`	`VO_OSMP_RETURN_CODE init()`	
`int Uninit()`	`VO_OSMP_RETURN_CODE destroy()`	
`void SetView()`	`VO_OSMP_RETURN_CODE setView()`	
`void SetDisplaySize()`	`VO_OSMP_RETURN_CODE setViewSize()`	
`void updateVideoAspectRatio()`	`VO_OSMP_RETURN_CODE setVideoAspectRatio()`	
`int Open()`	`VO_OSMP_RETURN_CODE open()`	
`int Close()`	`VO_OSMP_RETURN_CODE close()`	
`int Run()`	`VO_OSMP_RETURN_CODE start()`	
`int Pause()`	`VO_OSMP_RETURN_CODE pause()`	
`int Stop()`	`VO_OSMP_RETURN_CODE stop()`	
`int SetPos(int nPos)`	`VO_OSMP_RETURN_CODE setPosition(long msec)`	
`int GetPos()`	`long getPosition()`	
`int GetDuration()`	`long getDuration()`	
`int SetVolume(float fLeft, float fRight)`	`VO_OSMP_RETURN_CODE setVolume(float volume)`	
`onEven`	`onVOEvent`	
`onRequest`	`onVOEvent onVOSyncEvent`	

GetProgramInfo GetCurTrackInfo SelectProgram SelectStream SelectStream SelectTrack GetSubtitleLanguageInfo SelectSubtitleLanguage	Managed by: • getVideoCount • getAudioCount • getSubtitleCount • selectVideo • selectAudio • selectSubtitle • commitSelection • clearSelection • getVideoProperty • getAudioProperty • getSubtitleProperty • getPlayingAsset • getCurrentSelection	
setEventListener	setOnEventListener	
N/A	canBePaused	
GetParam	getParameter	The getParameter method should only be used based on recommendation by VisualOn.
SetParam	setParameter	The setParameter method should only be used based on recommendation by VisualOn.

4   Parameter IDs

API V3 uses the dedicated API method to replace the parameter IDs used in API V2. The *getParameter* method and *setParameter* method should only be used based on recommendation by VisualOn.

See Table 2 for the detailed information about parameter ID updates. For more information about the new methods in API V3, refer to the *API Reference Manual.zip* file.

Table 2: Detailed parameter ID changes

API V2 Parameter ID	API V3 Method	Comment
VOOSMP_PID_STATUS	VO_OSMP_STATUS getPlayerStatus()	
VOOSMP_PID_PLAYER_TYPE	VO_OSMP_PLAYER_ENGINE getPlayerType()	
VOOSMP_PID_CPU_INFO	Managed by: • getNumberOfCores • getMaxCPUFrequency • getProcessorType • getOSType • getOSVersion • getDeviceModel	
VOOSMP_SRC_PID_DVRINFO	Managed by: • getMinPosition • getMaxPosition	
VOOSMP_PID_MODULE_VERSION	getVersion(VO_OSMP_MODULE_TYPE module)	
VOOSMP_SRC_PID_GET_IO_STATUS	VO_OSMP_DOWNLOAD_STATUS getDownloadStatus(VO_OSMP_SOURCE_STREAMTYPE trackType)	
VOOSMP_SRC_PID_GET_EFFECTIVE_DURATION	getValidBufferDuration()	
VOOSMP_PID_OUTPUT_CONTROL_ACTIVE	isOutputControlActive(VO_OSMP_OUTPUT_CONTROL_TYPE type)	
VOOSMP_PID_OUTPUT_CONTROL_ENFORCE	isOutputControlEnforce(VO_OSMP_OUTPUT_CONTROL_TYPE type)	
VOOSMP_PID_UTC_POSITION	getUTCPosition()	
VOOSMP_SRC_PID_DRM_FILE_NAME	VO_OSMP_RETURN_CODE setDRMLibrary(String libName, String libApiName)	
VOOSMP_SRC_PID_DRM_API_NAME		
VOOSMP_SRC_PID_DOHTTPVERIFIC	VO_OSMP_RETURN_CODE	

ATION	setHTTPVerificationInfo((VOOSMPVERIFI CATIONInfo info)	
VOOSMP_SRC_PID_DRM_FILE_PATH	VO_OSMP_RETURN_CODE setDRMFilePath(String filePath)	
VOOSMP_SRC_PID_ENABLE_GZIP_I N_REQUEST	VO_OSMP_RETURN_CODE enableHTTPGzipRequest(boolean enable)	
setSmoothBAWhiteListFile	setSmoothBAWhiteListFile	
VOOSMP_PID_AUDIO_EFFECT_ENDP OINT_TYPE	VO_OSMP_RETURN_CODE setAudioEffectEndpointType(VO_OSMP_AU DIO_EFFECT_ENDPOINT_TYPE type)	
VOOSMP_SRC_PID_SOCKET_CONNEC TION_TYPE	VO_OSMP_RETURN_CODE setRTSPConnectionType(VO_OSMP_RTSP_CONNECTION_Type type)	
VOOSMP_SRC_PID_CAP_TABLE_PAT H	VO_OSMP_RETURN_CODE setDeviceCapabilityByFile(String filename)	
VOOSMP_SRC_PID_BA_STARTCAP	VO_OSMP_RETURN_CODE setInitialBitrate(int bitrate)	
VOOSMP_SRC_PID_DODRMVERIFICA TION	VO_OSMP_RETURN_CODE setDRMVerificationInfo(VOOSMPVerificationInfo info)	
VOOSMP_SRC_PID_DRM_UNIQUE_ID ENTIFIER VOOSMP_PID_DRM_UNIQUE_IDENTI FIER	setDRMUniqueIndentifier(String string)	
VOOSMP_SRC_PID_Timed_Text_Cl osedCaption	VO_OSMP_RETURN_CODE setSubtitlePath(String filePath)	
VOOSMP_SRC_PID_DRM_INIT_DATA _RESPONSE	VO_OSMP_RETURN_CODE setDRMInitData(VOOSMPDRMInit initData)	
VOOSMP_SRC_PID_DISABLE_CPU_A DAPTION	VO_OSMP_RETURN_CODE enableCPUAdaptation(boolean value)	
VOOSMP_PID_AUDIO_PCM_OUTPUT	VO_OSMP_RETURN_CODE enablePCMOutput(boolean value)	
VOOSMP_PID_SUBTITLE_FILE_NAM E	VO_OSMP_RETURN_CODE setSubtitlePath(String filePath)	
VOOSMP_SRC_PID_BUFFER_START_ BUFFERING_TIME	VO_OSMP_RETURN_CODE setInitialBufferingTime(int time)	

VOOSMP_SRC_PID_BUFFER_BUFFER ING_TIME	VO_OSMP_RETURN_CODE setAnewBufferingTime(int time)	
VOOSMP_SRC_PID_BITRATE_THRES HOLD	VO_OSMP_RETURN_CODE setBitrateThreshold(int upper, int lower)	
VOOSMP_SRC_PID_SEGMENT_DOWNL OAD_RETRY_COUNT	VO_OSMP_RETURN_CODE setSegmentDownloadRetryCount(int times)	
VOOSMP_SRC_PID_ENABLE_RTSP_H TTP_TUNNELING	VO_OSMP_RETURN_CODE enableRTSPOverHTTP(boolean enable)	
VOOSMP_SRC_PID_RTSP_OVER_HTT P_CONNECTION_PORT	VO_OSMP_RETURN_CODE setRTSPOverHTTPConnectionPort(int count)	
VOOSMP_SRC_PID_UPDATE_SOURCE _URL	VO_OSMP_RETURN_CODE updateSourceURL(String url)	
VOOSMP_SRC_PID_LOW_LATENCY_M ODE	VO_OSMP_RETURN_CODE enableLowLatencyVideo(boolean value)	
VOOSMP_PID_LOAD_DOLBY_DECODE R_MODULE VOOSMP_PID_LOAD_AUDIO_EFFECT _MODULE VOOSMP_PID_LOAD_AUDIO_DECODE R_MODULE	VO_OSMP_RETURN_CODE enableAudioDecoderLibrary(VO_OSMP_AUD IO_CODEC_TYPE type, boolean value)	
VOOSMP_PID_PREVIEW_SUBTITLE	VO_OSMP_RETURN_CODE previewSubtitle(String sampleText, View view)	
VOOSMP_SRC_PID_HTTP_RETRY_TI MEOUT	VO_OSMP_RETURN_CODE setHTTPRetryTimeout(int time)	
VOOSMP_SRC_PID_PREFERRED_AUD IO_LANGUAGE VOOSMP_SRC_PID_DEFAULT_AUDIO _LANGUAGE	VO_OSMP_RETURN_CODE setDefaultAudioLanguage(String language)	
VOOSMP_SRC_PID_PREFERRED_SUB TITLE_LANGUAGE VOOSMP_SRC_PID_DEFAULT_SUBTI TLE_LANGUAGE	VO_OSMP_RETURN_CODE setDefaultSubtitleLanguage(String language)	
VOOSMP_SRC_PID_DRM_ADAPTER_O	VO_OSMP_RETURN_CODE	

BJECT	setDRMAdapter(Object adapter, Boolean isLibraryName)	
VOOSMP_PID_AUDIO_PLAYBACK_SPEED	VO_OSMP_RETURN_CODE setAudioPlaybackSpeed(float speed)	
VOOSMP_PID_DRAW_RECT	VO_OSMP_RETURN_CODE setZoomMode(VO_OSMP_ZOOM_MODE mode, Rect rect)	
N/A	VO_OSMP_RETURN_CODE enableLiveStreamingDVRPosition()	
VOOSMP_PID_DRAW_COLOR	VO_OSMP_RETURN_CODE setColorType(VO_OSMP_COLORTYPE type)	
SetScreenBrightnessMode	setScreenBrightnessMode	
GetScreenBrightnessMode	getScreenBrightnessMode	
SetScreenBrightness	setScreenBrightness	
GetScreenBrightness	getScreenBrightness	
VOOSMP_PID_AUDIO_STREAM_ONOFF	VO_OSMP_RETURN_CODE enableAudioStream(boolean value)	
VOOSMP_PID_VIDEO_REDRAW	VO_OSMP_RETURN_CODE redrawVideo()	Only for standalone desktop application in future.
VOOSMP_PID_AUDIO_EFFECT_ENABLE	VO_OSMP_RETURN_CODE enableAudioEffect(boolean value)	
VOOSMP_PID_LICENSE_TEXT	VO_OSMP_RETURN_CODE setPreAgreedLicense(String str)	
VOOSMP_PID_LICENSE_FILE_PATH	VO_OSMP_RETURN_CODE setLicenseFilePath(String str)	
VOOSMP_SRC_PID_RTSP_MAX_SOCKET_ERROR_COUNT	VO_OSMP_RETURN_CODE setRTSPMaxSocketErrorCount(int count)	
VOOSMP_SRC_PID_RTSP_CONNECTION_TIMEOUT	VO_OSMP_RETURN_CODE setRTSPConnectionTimeout(int time)	
VOOSMP_PID_ADAPTIVE_PACKBLAK	enableVOAdaptivePlayback	
VOOSMP_PID_ZOOM_MODE	VO_OSMP_RETURN_CODE setZoomMode(VO_OSMP_ZOOM_MODE mode, Rect rect)	
VOOSMP_PID_LISTENER	VO_OSMP_RETURN_CODE setOnEventListener(VOCommonPlayerListener instance)	
VOOSMP_PID_VIDEO_RENDER_TYPE	VO_OSMP_RETURN_CODE setRenderType(	

	`VO_OSMP_RENDER_TYPE type)`	
`VOOSMP_PID_VIDEO_STREAM_ONOF` `F`	`VO_OSMP_RETURN_CODE enableVideoStream(` `boolean value)`	
`VOOSMP_PID_DEBLOCK_ONOFF`	`VO_OSMP_RETURN_CODE enableDeblock(` `boolean value)`	
`VOOSMP_PID_SURFACE_CHANGED`	`VO_OSMP_RETURN_CODE` `setSurfaceChangeFinished()`	
`VOOSMP_PID_COMMON_CCPARSER`	`VO_OSMP_RETURN_CODE enableSubtitle(` `boolean value)`	
`VOOSMP_PID_LICENSE_CONTENT`	`VO_OSMP_RETURN_CODE` `setLicenseContent(byte[] data)`	

`VOOSMP_PID_CLOSED_CAPTION_OU`
`TPUT`
`voSubTitleFormatSetting`
`VOOSMP_PID_SUBTITLE_SETTINGS`
`VOOSMP_PID_SUBTITLE_SETTINGS`
`_ONOFF`
`VOOSMP_PID_CLOSED_CAPTION_SE`
`TTINGS`
	Managed by:
	    `setSubtitleBoundingBox` `setSubtitleFontBackgroundColor` `setSubtitleFontBackgroundOpacit`
	`y` `setSubtitleFontBold` `setSubtitleFontColor` `setSubtitleFontEdgeType` `setSubtitleFontEdgeColor` `setSubtitleFontEdgeOpacity` `setSubtitleFontItalic` `setSubtitleFontName` `setSubtitleFontOpacity` `setSubtitleFontSizeScale` `setSubtitleFontUnderline` `setSubtitleGravity` `setSubtitlePath` `setSubtitleTrim` `setSubtitleTypeface` `setSubtitleWindowBackgroundColo`
	`r` `setSubtitleWindowBackgroundOpac`
	`ity` `resetSubtitleParameter`
		We support rendering the subtitle with FCC compatibility, and support position settings.

`VOOSMP_PID_LOW_LATENCY`	`VO_OSMP_RETURN_CODE` `enableLowLatencyVideo(boolean value)`	
`VOOSMP_PID_APPLICATION_SUSPE`	`VO_OSMP_RETURN_CODE suspend(`	

ND	boolean keepAudio)	
VOOSMP_PID_APPLICATION_RESUME	VO_OSMP_RETURN_CODE resume(Object sv)	
VOOSMP_SRC_PID_RTSP_CONNECTION_PORT	VO_OSMP_RETURN_CODE setRTSPConnectionPort(VOSOMPRTSPPort portNum)	
VOOSMP_SRC_PID_HTTP_HEADER	VO_OSMP_RETURN_CODE setHTTPHeader(String headerName, String headerValue)	
VOOSMP_SRC_PID_HTTP_PROXY_INFO	VO_OSMP_RETURN_CODE setHTTPProxy(VOOSMPHTTPProxy proxy)	
VOOSMP_SRC_PID_BUFFER_MAX_SIZE	VO_OSMP_RETURN_CODE setMaxBufferingTime(int time)	
VOOSMP_SRC_PID_PRESENTATION_DELAY	VO_OSMP_RETURN_CODE setPresentationDelay(int time)	
N/A	- loadAdCall - loadVideoByUrl - getVideoAdClickThru - loadVideoById - loadVideo - setAdTrackingAPI - enableFullScreen - resume(VO_OSMP_AD_RESUME_MODE resumeMode, long resumePosition)	Newly added in API V3 for the Ads feature.
VOOSMP_PID_SEI_EVENT_INTERVAL	Managed by: - startSEINotification - stopSEINotification	
GetSEITimingInfo	getSEIInfo	
VOOSMP_PID_RETRIEVE_SEI_INFO	VO_OSMP_RETURN_CODE enableSEI(VO_OSMP_SEI_INFO_FLAG flag)	
VOOSMP_PID_SEI_POST_VIDEO_PROCESS	VO_OSMP_RETURN_CODE enableSEIPostProcessVideo(boolean value)	
VOOSMP_SRC_PID_PD_CONNECTION_RETRY_TIMES	VO_OSMP_RETURN_CODE setPDConnectionRetryCount(int times)	
VOOSMP_PID_READ_SUBTITLE_C	N/A	Obsoleted in API V3

ALLBACK		
VOOSMP_PID_AUDIO_DSP_CLOCK		
VOOSMP_PID_PAUSE_REFERENCE_COLOCK		
VOOSMP_PID_AUDIO_RENDER_LATENCY		
VOOSMP_PID_AUDIO_RENDER_FORMAT		
VOOSMP_PID_OUTPUT_CONTROL_SETTINGS		
VOOSMP_PID_OUTPUT_CONTROL_UPDATE_CONNECT_STATUS		
VOOSMP_PID_SECOND_SURFACE		
VOOSMP_PID_ANALYTICS_OBJECT		
VOOSMP_PID_WRITEABLE_PATH		
VOOSMP_PID_SUBTITLE_URL		
VOOSMP_PID_SET_UI_MGR		
VOOSMP_PID_CHECK_LICENSE_DISPLAY		
VOOSMP_PID_AUDIO_VOLUME		
VOOSMP_PID_FUNC_LIB		
VOOSMP_PID_MAX_BUFFTIME		
VOOSMP_PID_MIN_BUFFTIME		
VOOSMP_PID_FUNC_DRM		
VOOSMP_PID_AUDIO_REND_ADJUST_TIME		
VOOSMP_PID_CPU_NUMBER		
VOOSMP_PID_AUDIO_REND_BUFFER_TIME		
VOOSMP_PID_AUDIO_DECODER_FILE_NAME		
VOOSMP_PID_VIDEO_DECODER_FILE_NAME		
VOOSMP_PID_PERFORMANCE_DATA		
VOOSMP_PID_FUNC_READ_IO		
VOOSMP_PID_AUDIO_STEP_BUFF		

TIME		
VOOSMP_PID_AUDIO_SINK_BUFF TIME		
VOOSMP_PID_MFW_CFG_FILE		
VOOSMP_PID_AUDIO_DECODER_A PI_NAME		
VOOSMP_PID_VIDEO_DECODER_A PI_NAME		
VOOSMP_PID_AUTHENTICATION_ INFO		
VOOSMP_PID_SOURCE_FILENAME		
VOOSMP_PID_LIB_NAME_PREFIX		
VOOSMP_PID_LIB_NAME_SUFFIX		
VOOSMP_PID_COMMAND_STRING		
VOOSMP_PID_VIEW_ACTIVE		
VOOSMP_PID_AUDIO_SINK		
VOOSMP_PID_BITMAP_HANDLE		
VOOSMP_PID_IOMX_PROBE		
VOOSMP_PID_MEDIACODEC_AUDI O_DECODER		
VOOSMP_PID_CLEAR_VIDEO_ARE A		
VOOSMP_PID_SUBTITLE_TIME_O FFSET		
VOOSMP_PID_ANALYTICS_FUNCT ION_SET		
VOOSMP_PID_HDMI_DISPLAY		
VOOSMP_PID_SUBTITLE_IN_ENG INE		
VOOSMP_PID_FIXEDSIZE_THRES HOLD		
VOOSMP_PID_AUDIO_MUTE		
VOOSMP_PID_KEEP_ASPECT_RAT IO		
VOOSMP_PID_USING_API3		
VOOMXAL_PID_AUDIO_STREAM_O NOFF		
VOOMXAL_PID_VIDEO_STREAM_O		

NOFF VOOSMP_PID_SENDBUFFERFUNC VOOSMP_PID_AUDIO_FORMAT VOOSMP_PID_VIDEO_FORMAT VOOSMP_PID_BLUETOOTH_HANDS ET VOOSMP_SRC_PID_FUNC_READ_B UF VOOSMP_SRC_PID_INIT_PARAM_ ACTUAL_FILE_SIZE VOOSMP_SRC_PID_INIT_PARAM_ INIT_LIBOP VOOSMP_SRC_PID_INIT_PARAM_ IO_FILE_NAME VOOSMP_SRC_PID_INIT_PARAM_ IO_API_NAME VOOSMP_SRC_PID_INIT_PARAM_ DURATION VOOSMP_SRC_PID_PEEK_MORE_B UFFERS VOOSMP_SRC_PID_TRACK_CHANG ED VOOSMP_SRC_PID_ANALYTICS_O BJECT VOOSMP_SRC_PID_OUTPUT_TS_S AMPLE VOOSMP_SRC_PID_FUNC_IO VOOSMP_SRC_PID_CC_AUTO_SWI TCH_DURATION VOOSMP_SRC_PID_DRM_THIRDPA RTY_FUNC_SET VOOSMP_SRC_PID_DRM_CALLBAC K_FUNC VOOSMP_SRC_PID_COMMAND_STR ING VOOSMP_SRC_PID_DOWNLOAD_FA IL_MAX_TOLERANT_COUNT VOOSMP_SRC_PID_DRM_FUNC_SE		

T VOOSMP_SRC_PID_SOURCE_MODU LE_OBJECT VOOSMP_SRC_PID_BA_WORKMODE VOOSMP_SRC_PID_ANALYTICS_F UNCTION_SET SetSurfaceHolder VOOSMP_SRC_PID_UTC_POSITIO N		

5   Event Callback IDs

Event callback IDs (sent to onVOEvent) have been updated for consistency and clarity in API V3. See Table 3 for the detailed information about callback ID updates. For more information about the new callback events in API V3, refer to the *API Reference Manual.zip* file.

Table 3: Detailed callback ID updates

API V2 callback ID	API V3 callback ID	Comment
`VOOSMP_CB_Error`	`VO_OSMP_CB_ERROR`	
`VOOSMP_CB_PlayComplete`	`VO_OSMP_CB_PLAY_COMPLETE`	
`VOOSMP_CB_VideoStartBuff`	`VO_OSMP_CB_VIDEO_START_BUFFER`	
`VOOSMP_CB_VideoStopBuff`	`VO_OSMP_CB_VIDEO_STOP_BUFFER`	
`VOOSMP_CB_AudioStartBuff`	`VO_OSMP_CB_AUDIO_START_BUFFER`	
`VOOSMP_CB_AudioStopBuff`	`VO_OSMP_CB_AUDIO_STOP_BUFFER`	
`VOOSMP_CB_SourceBuffTime`	`VO_OSMP_CB_SRC_BUFFERING_TIME`	
`VOOSMP_CB_SeekComplete`	`VO_OSMP_CB_SEEK_COMPLETE`	
`VOOSMP_CB_VideoAspectRatio`	`VO_OSMP_CB_VIDEO_ASPECT_RATIO`	
`VOOSMP_CB_VideoSizeChanged`	`VO_OSMP_CB_VIDEO_SIZE_CHANGED`	
`VOOSMP_CB_CodecNotSupport`	`VO_OSMP_CB_CODEC_NOT_SUPPORT`	
`VOOSMP_CB_Deblock`	`VO_OSMP_CB_DEBLOCK`	
`VOOSMP_CB_MediaTypeChanged`	`VO_OSMP_SRC_CB_ADAPTIVE_STREAMING_INFO`	
`VOOSMP_CB_HWDecoderStatus`	`VO_OSMP_SRC_ADAPTIVE_STREAMING_INFO_EVENT_MEDIATYPE_CHANGE`	
`VOOSMP_CB_AUTHENTICATION_RESPONSE`	`VO_OSMP_CB_HW_DECODER_STATUS`	
`VOOSMP_CB_LanguageInfoAvailable`	`VO_OSMP_CB_AUTHENTICATION_RESPONSE`	
`VOOSMP_CB_VideoRenderStart`	`VO_OSMP_CB_LANGUAGE_INFO_AVAILABLE`	
`VOOSMP_CB_OpenSource`	`VO_OSMP_CB_VIDEO_RENDER_START`	
`VOOSMP_CB_SEI_INFO`	`VO_OSMP_CB_SEI_INFO`	
`VOOSMP_CB_Audio_Render_Failed`	`VO_OSMP_CB_AUDIO_RENDER_FAIL`	
`VOOSMP_CB_PCM_OUTPUT`	`VO_OSMP_CB_PCM_OUTPUT`	
`VOOSMP_CB_LicenseFailed`	`VO_OSMP_CB_LICENSE_FAIL`	
`VOOSMP_CB_AudioRenderStart`	`VO_OSMP_CB_AUDIO_RENDER_START`	
`VOOSMP_CB_Block_Playback`	`VO_OSMP_CB_OUTPUT_CONTROL_BLOCK_PLAYBACK`	
`VOOSMP_CB_Block_Output`	`VO_OSMP_CB_OUTPUT_CONTROL_BLOCK_OUT`	

	PUT	
VOOSMP_CB_Output_Control_Change_Resolu tion	VO_OSMP_CB_OUTPUT_CONTROL_CHANGE_RE SOLUTION	
VOOSMP_CB_MULTIPLE_INSTANCES_NOT_SUPPO RTED	VO_OSMP_CB_MULTIPLE_INSTANCES_NOT_S UPPORTED	
VOOSMP_CB_Capture_Software_Running	VO_OSMP_CB_OUTPUT_CONTROL_CAPTURE_S OFTWARE_RUNNING	
VOOSMP_CB_BLUETOOTHHANDSET	VO_OSMP_CB_BLUETOOTHHANDSET_CONNECTION	
VOOSMP_SRC_CB_Connecting	VO_OSMP_SRC_CB_CONNECTING	
VOOSMP_SRC_CB_Connection_Finished	VO_OSMP_SRC_CB_CONNECTION_FINISHED	
VOOSMP_SRC_CB_Connection_Timeout	VO_OSMP_SRC_CB_CONNECTION_TIMEOUT	
VOOSMP_SRC_CB_Connection_Loss	VO_OSMP_SRC_CB_CONNECTION_LOSS	
VOOSMP_SRC_CB_Download_Status	VO_OSMP_SRC_CB_DOWNLOAD_STATUS	
VOOSMP_SRC_CB_Connection_Fail	VO_OSMP_SRC_CB_CONNECTION_FAIL	
VOOSMP_SRC_CB_Download_Fail	VO_OSMP_SRC_CB_DOWNLOAD_FAIL	
VOOSMP_SRC_CB_DRM_Fail	VO_OSMP_SRC_CB_DRM_FAIL	
VOOSMP_SRC_CB_Playlist_Parse_Err	VO_OSMP_SRC_CB_PLAYLIST_PARSE_ERR	
VOOSMP_SRC_CB_Connection_Rejected	VO_OSMP_SRC_CB_CONNECTION_REJECTED	
VOOSMP_SRC_CB_BA_Happened	VO_OSMP_SRC_CB_BA_HAPPENED	
VOOSMP_SRC_CB_DRM_Not_Secure	VO_OSMP_SRC_CB_DRM_NOT_SECURE	
VOOSMP_SRC_CB_DRM_AV_Out_Fail	VO_OSMP_SRC_CB_DRM_AV_OUT_FAIL	
VOOSMP_SRC_CB_Download_Fail_Waiting_Re cover	VO_OSMP_SRC_CB_DOWNLOAD_FAIL_WAITIN G_RECOVER	
VOOSMP_SRC_CB_Download_Fail_Recover_Su ccess	VO_OSMP_SRC_CB_DOWNLOAD_FAIL_RECOVE R_SUCCESS	
VOOSMP_SRC_CB_Open_Finished	VO_OSMP_SRC_CB_OPEN_FINISHED	
VOOSMP_SRC_CB_Customer_Tag	VO_OSMP_SRC_CB_CUSTOMER_TAG	
VOOSMP_SRC_CB_Adaptive_Streaming_Info	VO_OSMP_SRC_CB_ADAPTIVE_STREAMING_I NFO	
VOOSMP_SRC_CB_Adaptive_Streaming_Error	VO_OSMP_SRC_CB_ADAPTIVE_STREAMING_E RROR	
VOOSMP_SRC_CB_Adaptive_Stream_Warning	VO_OSMP_SRC_CB_ADAPTIVE_STREAM_WARN ING	
VOOSMP_SRC_CB_RTSP_Error	VO_OSMP_SRC_CB_RTSP_ERROR	
VOOSMP_SRC_CB_Seek_Complete	VO_OSMP_SRC_CB_SEEK_COMPLETE	
VOOSMP_SRC_CB_Program_Changed	VO_OSMP_SRC_CB_PROGRAM_CHANGED	
VOOSMP_SRC_CB_Program_Reset	VO_OSMP_SRC_CB_PROGRAM_RESET	

VOOSMP_SRC_CB_Adaptive_Stream_SEEK2LAS TCHUNK	VO_OSMP_SRC_CB_ADAPTIVE_STREAMING_S EEK2LASTCHUNK	
VOOSMP_SRC_CB_Not_Applicable_Media	VO_OSMP_SRC_CB_NOT_APPLICABLE_MEDIA	
VOOSMP_SRC_CB_PD_DOWNLOAD_POSITION	VO_OSMP_SRC_CB_PD_DOWNLOAD_POSITION	
VOOSMP_SRC_CB_PD_BUFFERING_PERCENT	VO_OSMP_SRC_CB_PD_BUFFERING_PERCENT	
VOOSMP_SRC_CB_UPDATE_URL_COMPLETE	VO_OSMP_SRC_CB_UPDATE_URL_COMPLETE	
VOOSMP_SRC_CB_Preferred_Audio_Language	VO_OSMP_SRC_CB_PREFERRED_AUDIO_LANG UAGE	
VOOSMP_SRC_CB_Preferred_Subtitle_Langu age	VO_OSMP_SRC_CB_PREFERRED_SUBTITLE_L ANGUAGE	
VOOSMP_SRC_CB_IO_HTTP_Start_Download	VO_OSMP_SRC_CB_IO_HTTP_START_DOWNLO AD	
VOOSMP_SRC_CB_IO_HTTP_Download_Failed	VO_OSMP_SRC_CB_IO_HTTP_DOWNLOAD_FAI L	
VOOSMP_SRC_CB_DRM_Init_Data	VO_OSMP_SRC_CB_DRM_INIT_DATA	
N/A	VO_OSMP_AD_CB_PLAYLIST_START VO_OSMP_AD_CB_PLAYLIST_END VO_OSMP_AD_CB_CONTENT_START VO_OSMP_AD_CB_CONTENT_END VO_OSMP_AD_CB_AD_START VO_OSMP_AD_CB_AD_END VO_OSMP_AD_CB_VIDEO_PROGRESS VO_OSMP_AD_CB_VIDEO_DONE VO_OSMP_AD_CB_STATE_CHANGE VO_OSMP_AD_CB_PLAYBACKINFO VO_OSMP_AD_CB_NO_AD_CONTENT VO_OSMP_AD_CB_AD_LOAD_ERROR VO_OSMP_AD_CB_VIDEO_NOT_AVAILABLE VO_OSMP_AD_CB_DATA_LOAD_ERROR VO_OSMP_AD_CB_VIDEO_GEO_BLOCKED	Newly added for the Ads feature in API V3.
VOOSMP_CB_BufferStatus VOOSMP_CB_VideoDelayTime VOOSMP_CB_VideoLastTime VOOSMP_CB_VideoDropFrames VOOSMP_CB_VideoFrameRate VOOSMP_CB_Metadata_Arrive VOOSMP_CB_Query_Output_Control_Capacit y	N/A	Obsoleted in API V3

VOOSMP_CB_Track_Changed		
VOOSMP_CB_SURFACE_EXCHANGED		
VOOSMP_CB_AudioPlayedoutPosition		
VOOSMP_CB_Analytics_Display_Data		
VOOSMP_CB_License_Display		
VOOSMP_CB_ClosedCaptionData		
VOOSMP_CB_RESUME		
VOOSMP_SRC_CB_Output_Control_Settings		