MediaCMD HTTP/AJAX Interface

User Guide

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1 Introduction

This manual is for MediaCMD version 7 software development kit from Drastic Technologies, Ltd.

1.1 Conventions

This manual assumes the following:

That the user knows how to operate a mouse and keyboard and perform the basic functions of Microsoft Windows, macOS or Linux operating system.

That the user is familiar with the video editing software in use.

That the user has access to technicians capable of placing the device on the network and setting up any SAN systems if necessary.

The name of a control or display present on the interface will be displayed in **bold** text.

Where a portion of the manual is referred to the name of section mentioned will be displayed in *italics*.

Certain images in this document may have been grayed out where it is useful or necessary to place indicator marks to show specific controls or displays above a darker background.

1.2 About the MediaCMD API

Drastic's MediaCMD RESTful HTTP API is a standard method of accessing and controlling Drastic's VVW series servers, Net-X-SDI I/O ports, and videoQC. The API is based directly on the binary MediaCMD SDK and can use any of the commands specified there. For this API, standard HTTP strings are sent, and XML responses are returned. Any language that supports HTTP can be used, but most interfaces are built on HTML5 and JavaScript.

When you install any of the above products, a ***vvwlibrary.js*** will be installed that contains helper functions for dealing with this API. There will also be HTML files installed that use the API to control and retrieve status from the API. These are valuable examples and should be examined, along with this documentation.

There are three major types of commands available from the REST/HTTP interface:

1. Simple string commands and returns
2. Full MediaCmd AJAX/XML access
3. Special XML access commands

1.3 System Requirements

1.3.1 Recommended Environment

MediaCMD can be installed on various systems since real time performance is not an issue, but you will want a modern system capable of performing common computer functions.

Minimum Hardware Platform
Post 2000 multi core processor capable of running the host application.

Recommended Hardware Platform
Recommend hardware from the host application vendor. Multi cores and OpenCL, Cuda and shader GPUs will be used if available, but are not absolutely required.

Demo downloads of Drastic software are available for the user to test their application and to confirm their workflow. Faster and more powerful hardware will provide better performance. In some cases, specific hardware will be required in order to enable resource-intensive, advanced or optional features.

2 Full MediaCmd AJAX/XML Access

This access methods allows our JavaScript or PHP application to access all the same functions used by Drastic's GUIs from an HTML interface. The basic form of the commands is:

http://localhost:1080/VVWXMLMediaCmd?<mediacmd>

The <mediacmd> is a series of ampersand delimited (&) commands and modifiers. Normally this command will be sent via an HTTPObject, and will return synchronously or asynchronously a standard XML return that can be parsed. To send a command in AJAX/JavaScript, you will first need to instantiate an HTTPObject to send it through. Here is an HTTPObject instantiation that will work in most browsers:

```
// Create an HttpObject
function getHTTPObject()
{
	var xmlhttp;

	/*@cc_on
		@if (@_jscript_version >= 5)
			try
			{
				xmlhttp = new ActiveXObject("Msxml2.XMLHTTP");
			}catch (e)
			{
				try
				{
					xmlhttp = new ActiveXObject("Microsoft.XMLHTTP");
				} catch (E)
				{
					xmlhttp = false;
				}
			}
		@else
			xmlhttp = false;
		@end @*/

	if (!xmlhttp && typeof XMLHttpRequest != 'undefined')
	{
		try
		{
```

```
                xmlhttp = new XMLHttpRequest();
            } catch (e)
            {
                xmlhttp = false;
            }
        }
        return xmlhttp;
}

// Instantiate the various HTTP Objects
var _xmlHttp = getHTTPObject(); // Create the HTTP Object
```

Once the HTTPObject is instantiated into a variable, the variable (_xmlHttp in this case) can be used to call the DDR and send and receive MediaCmds. These commands can be sent synchronously (the command will complete and return the XML immediately) or asynchronously (the command will process, but return immediately. Later a callback will be called with the return XML data). Either way the return will be the same.

To send a command synchronously (return after processing) without using the return:

```
function play()
{
        // Build the URL to connect to
        var url = "VVWXMLMediaCmd?Play";
        // Open a connection to the server
        _xmlHttp.open("GET", url, false);      // indicates sync call
        // Send the request
        _xmlHttp.send(null);
}
```

For a command that is sent synchronously, but the return needs to be processed, the call is very similar:

```
function getClipMode()
{
        // Build the URL to connect to
        var url = "VVWXMLMediaCmd?GetValue&position=0&cmdalt=ClipMode&Flags=-1";
        // Open a connection to the server
        _xmlHttp.open("GET", url, false);      // indicates sync call
        // Send the request
        _xmlHttp.send(null);
        // Get the clip mode out of the XML response
        var xmlobject = _xmlHttpMode.responseXML;
```

```
        if(xmlobject == null)   {
                return;
        }
        // Get MediaCmd return (in XML)
        var mCmd = xmlobject.getElementsByTagName("MediaCmd");
        if(mCmd[0])
        {
                // Return the current mode
                return mCmd[0].getElementsByTagName("Position")[0].getAttribute("Value")
    }
        return “errorValue”;
}
```

A typical XML return would look like this:

```
<MediaCmd>
  <!--  Drastic MEDIACMD xml structure version 1,0  -->
  <CmdID Value="-98237952"/>
  <StructSize Value="1116"/>
  <Channel Value="0"/>
  <Cmd Value="2">Play</Cmd>
  <Speed Value="65520">0</Speed>
  <Position Value="-1" TcType="drop-frame">99:59:59;29</Position>
</MediaCmd>
```

A status return (VVWXMLGetStatus) would look like this:

```
<MediaCmd>
  <!--  Drastic MEDIACMD xml structure version 1,0  -->
  <CmdID Value="-98237952"/>
  <StructSize Value="1116"/>
  <Channel Value="0"/>
  <Cmd Value="1" UseClipID="1">Pause</Cmd>
  <Speed Value="0">0</Speed>
  <VideoChannels Value="-1"/>
  <AudioChannels Value="0"/>
  <InfoChannels Value="-1"/>
  <CmdAlt Value="0"/>
  <Position Value="300" TcType="drop-frame">00:00:10;00</Position>
  <Start Value="-1" TcType="drop-frame">99:59:59;29</Start>
  <End Value="396" TcType="drop-frame">00:00:13;06</End>
  <ClipID>dt-prev</ClipID>
  <FileName>
```

```
M:/TestVid/T2V013_Europe3060/Video_1080i30_422_10b_YUV/
T2V013233_Follow_that_ship_1920x1080i30_10b_P422.yuv
  </FileName>
</MediaCmd>
```

Often, to maximize user responsiveness, or to allow for long commands to process, commands need to be sent asynchronously. The asynchronous version of the command is essentially the same as the synchronous with processing version, except the send and return are divided into separate functions:

```
function getClipMode()
{
	// Build the URL to connect to
	var url = "VVWXMLMediaCmd?GetValue&position=0&cmdalt=ClipMode&Flags=-1”;
	// Open a connection to the server
	_xmlHttp.open("GET", url, false);	// indicates sync call
	// Setup a function for the server to run when it's done
	_xmlHttp.onreadystatechange = updateClipMode;
	// Send the request
	_xmlHttp.send(null);
}
// A response to an 'Mode' request has been received
function updateMode()
	if (_xmlHttpMode.readyState == 4)
	{
		// A complete response has been received
		// Get the clip mode out of the XML response
		var xmlobject = _xmlHttpMode.responseXML;
		if(xmlobject == null)	{
			return;
		}
		// Get MediaCmd return (in XML)
		var mCmd = xmlobject.getElementsByTagName("MediaCmd");
		if(mCmd[0])
		{
			// Return the current mode
			return mCmd[0].getElementsByTagName("Position")[0].getAttribute("Value")
		}
	}
	return “errorValue”;
}
```

2.1 VVWXMLMediaCmd Main Commands

The first parameter of the VVWXMLMediaCmd? (following the question mark) must be be one of the following commands:

Stop	Full stop/all stop/E to E
Pause	Pause on current frame, seek or load
Play	Play, either at normal speed or shuttle speeds. May also load and seek.
Record	Record to the disk or tape
RecStop	Prepare for a record
Eject	Eject the current tape or media
Transfer	Transfer to/from an internal channel and a VTR
Insert	Insert media into the clip bin or time code space
Blank	Remove media from the clip bin or time code space
Delete	Delete media from the storage and blank it
Trim	Alter a clip or time code space edit
ChanSelect	Change the currently selected channels
GetState	Get the current channel state
SetState	Set the current channel state
GetValue	Get a setup value
ValueSupported	See if a setup value is supported
SetValue	Change a setup value
Error	Report an error
Terminate	Kill the current operation
Abort	Abort the current operation

2.2 VVWXMLMediaCmd Modifiers

With these commands a number of modifiers are available. Each modifier must be separated by an ampersand (&) on the command line.

channel=%d	Specify the channel this command should be sent to
position=%s	Set the position element for a command 1:00:00:00 – go to one hour +5 – go forward from the current location 5 frames -5:00 – go backward from the current location 5 seconds 1800 – go to one minute (specified as 1800 frames, not drop frame time code)
start=%s	Set the start element (see position for format)
end=%s	Set the end element (see position for format)
speed=%d	Set the speed element for a command 65520 – normal forward play (100%) -65520 – reverse play 32760 – half play speed (50%) -655200 – 10 times reverse speed 0 - pause (no play)
timems	Millisecond time for the command
cmdalt	Set the cmdalt element of the mediacmd
videochannels	Which video channels to use (bitwise)
audiochannels	Which audio channels to use (bitwise)
infochannels	Which information channels to use (bitwise)
clipid	8 character clip identifier
filename	filename for the command
string	String to be used in the command

There are a number of flags that may be used, just like the elements above

Deferred	Wait for previous command to complete before this new command
OverrideDeferred	Override a previously deferred command
Loop	Loop whole clip, or a start/end subset
AllIDs	Command should affect all available clip IDs
NoClipFiles	Ignore clip space clips
NoTCSpaces	Ignore conform space files
IsShuttle	The command should be interpreted as a shuttle, even for normal play
UsingCurrent	Use the current start/end/position
UseFrameCount	Use the absolute frame count, not the time code values

Fields	Use fields, is not a progressive signal format
Ripple	When removing a file, ripple the following files back
Trigger	Wait for a trigger
Preview	Doing a preview, not a full play
Test	Don’t do the command, just see if it exists
NoReturn	Don’t return any information from the command

2.3 VVWXMLMediaCmd Examples

VVWXMLMediaCmd?play
Normal play
VVWXMLMediaCmd?play&speed=32760
Play at 50% forward speed
VVWXMLMediaCmd?play&speed=-65520
Play at 100% reverse play speed
VVWXMLMediaCmd?play&start=1:00&end=4:00&loop
Play from one second to four seconds in a loop
VVWXMLMediaCmd?pause
Pause the channel
VVWXMLMediaCmd?stop
Stop (e to e passthrough) the channel
VVWXMLMediaCmd?pause&position=1:00:00
Seek to one minute
VVWXMLMediaCmd?record&clipid=newrec&end=5:00
Record a new file named 'newrec' which will be five seconds long

2.4 Dealing with Picon Images

Server Mode, clip: Kroatien, file: KroatienMovie.mov

http://localhost/VVWXMLMediaCmd? SetValue&cmdalt=1000000&clipid=Kroatien&position=200
– Make a new picon from frame 200 of the clip Kroatien – result name: KroatienMovie.picon.jpg
http://localhost/VVWXMLMediaCmd? GetValue&cmdalt=1000000&clipid=Kroatien&position=ffffffff
– Return the actual file name of the picon file (char elem 9) – result name: Kroatien.picon.jpg
http://localhost/VVWXMLMediaCmd? GetValue&cmdalt=1000000&clipid=Kroatien&position=4294967295

– Return the size of the picon file in the Position elements – result: dwPosition = 7900
http://localhost/VVWXMLMediaCmd? GetValue&cmdalt=1000000&clipid=Kroatien&position=1
– Return the actual bytes of data for the JPEG picon frame in arbID – result: Not available in HTTP, have to use C/C++
http://localhost/VVWXMLMediaCmd?SetValue&cmdalt=1000000&filename=V:\Media\ KroatienMovie.mov&position=100
– Make a new picon from frame 100 without associating it with the clip – result name: KroatienMovie.picon.jpg (not normally used, conflicts with VTR tape mode picon)

VTR Tape Mode, Time line 00:00:01:00 Kroatien.mov?

http://localhost/VVWXMLMediaCmd?SetValue&cmdalt=1000000&filename=V:\Media\ Kroatien.mov&position=1000
– Make a new picon from the frame at position 1000, default for file – result name: Kroatien.picon.jpg
http://localhost/VVWXMLMediaCmd?GetValue&cmdalt=1000000&filename=V:\Media\ Kroatien.mov&position=ffffffff
– Return the actual file name of the picon file (char elem 9) – result name: Nonparticipating
http://localhost/VVWXMLMediaCmd?GetValue&cmdalt=1000000&filename=V:\Media\ Kroatien.mov&position=4294967295
– Return the size of the picon file in the Position elements – result: dwPosition = 7900
http://localhost/VVWXMLMediaCmd?GetValue&cmdalt=1000000&filename=V:\Media\ Kroatien.mov&position=1
– Return the actual bytes of data for the JPEG picon frame in arbID – result: Not available in HTTP, have to use C/C++

3 Returning Preview Images And Meters

The MediaCMD API includes commands to return a small, RGBA preview image and audio meter level values to provide confidence monitoring. The code to achieve this is used in the videoQC and Net-X-SDI HTML transport examples:

The command to return the preview image is

http://localhost:1080/VVWXMLMediaCmd?

getvalue&cmdalt=previewframe&start=320&end=180&position=1&preview

The start is the requested width, the end is the requested height, and the preview flag indicates the image should be returned in RGBA order (for web browsers) rather than BGRA order. An “&convert” flag can also be added to cause the frame to be zipped before being sent. The response XML to this will include an <arbID> element with the hex sent as a string.

```
<?xml version="1.0" encoding="iso-8859-1" ?>
<MediaCmd>
  <!-- Drastic MEDIACMD xml structure version 1,0 --><CmdID Value="-98237952" />
  <StructSize Value="230476" />
  <Channel Value="0" />
  <Cmd Value="14" UseClipID="1">GetValue</Cmd>
  <CmdAlt Value="1000007" />
  <Position Value="1" TcType="drop-frame">00:00:00;01</Position>
  <Start Value="320" TcType="drop-frame">00:00:10;20</Start>
  <End Value="180" TcType="drop-frame">00:00:06;00</End>
  <arbID Type="hex"   Length="230400">FAFFFDFFF8FDFBFF6....A6267FF7C7579F
  </arbID>
</MediaCmd>
```

From that arbID, the data can be converted back to binary with hexToBytes() and optionally unzipped with Zlib.Inflate(), and then copied into a 2D context for display with imageData.data.set() and then context.putImageData().

The audio meter level can be retrieved as a value between 0 and 65536 for RMS, Peak or Loudness. The command to get the meter value is

http://localhost:1080/VVWXMLMediaCmd?GetValue&position=0&cmdalt=AudWavePeakRMS&Flags=-1

On return, the left/right RMS values will be in the Start element, value attribute, and the peak will be in the End element, value attribute. To separate the right and left values, remove the upper and lower words of the value:

```
var leftRMS = (Start % 65536);
var rightRMS = (Start / 65536);
```

3.1 Special XML Access Commands

XML Returns. These are to be used with AJAX/DOM pages.

http://localhost/VVWXMLGetStatus
– Returns an XML package including state, speed, position start and end points.
<MediaCmd> <!-- Drastic MEDIACMD xml structure version 1,0 --> <CmdID Value="-98237952"/> <StructSize Value="1116"/> <Channel Value="0"/> <Cmd Value="1" UseClipID="1">Pause</Cmd> <Speed Value="0">0</Speed> <VideoChannels Value="-1"/> <AudioChannels Value="0"/> <InfoChannels Value="-1"/> <CmdAlt Value="0"/> <Position Value="627" TcType="drop-frame">00:00:20;27</Position> <Start Value="-1" TcType="drop-frame">99:59:59;29</Start> <End Value="396" TcType="drop-frame">00:00:13;06</End> <ClipID>dt-prev</ClipID> <FileName> M:/TestVid/T2V013_Europe3060/Video_1080i30_422_10b_YUV/ T2V013233_Follow_that_ship_1920x1080i30_10b_P422.yuv </FileName> </MediaCmd>
http://localhost/VVWXMLNextClip
– Returns an XML package with all the clip information. Used to retrieve the clip bin information
http://localhost/VVWXMLClipInfo
– Returns an XML package with all the clip information. Used to retrieve information on a specific clip
http://localhost/VVWXMLEDLState
– Used in conjunction with VVWXMLEDLInfo to retrieve the time code space edits. The command will always be VVWXMLEDLState? position=#&videochannels=#&audiochannels=#&infochannels=#.
http://localhost/VVWXMLEDLInfo
– Used in conjunction with VVWXMLEDLState to retrieve the time code space edits.

Here is a basic EDL retrieval session:

Call··· ·Position··· ·Start··· ·End ··· ·V ··· ·A ··· ·I ··· ·File Name··· ·Comment
VVWXMLEDLInfo··· ·0···
0··· ·0··· ·0···
Restart list at 0
return info··· ·0··· ·0··· ·300··· ·1··· ·2··· ·0··· ·file1.mov··· ·10 sec VA2 from file1
VVWXMLEDLState··· ·0···
0··· ·0··· ·0···
First state sent in above
return state··· ·0···
1··· ·2··· ·0···
Used clip channels to pass back into Info
VVWXMLEDLInfo··· ·0···
1··· ·2··· ·0···
Copy of the return of VVWXMLEDLState above
return info··· ·0··· ·0··· ·150··· ·0··· ·1··· ·0··· ·file2.wav··· ·5 sec A1 from file2
VVWXMLEDLState··· ·0···
1··· ·2··· ·0···
Use the return of the last VVWXMLEDLState
return state··· ·0···
1··· ·3··· ·0···
These are the channels used so far
VVWXMLEDLInfo··· ·0···
1··· ·3··· ·0···
Copy of the return of VVWXMLEDLState above
return info··· ·150··· ·150··· ·210··· ·0··· ·1··· ·0··· ·file3.wav··· ·2 sec A1 from file3
VVWXMLEDLState··· ·0···
1··· ·3··· ·0···
Use the return of the last VVWXMLEDLState
return state··· ·150···
0··· ·1··· ·0···
All edits completed before 150

Take the MEDIACMD struct returned from VVWXMLEDLState and find the next active clip. For the first clip in the timeline, send all zeroes. Other than the first call, all calls should include the position/channel bits from the previous VVWXMLEDLState call and (other than the first call), VVWXMLEDLState should be called immediately before VVWXMLEDLInfo.

http://localhost/VVWXMLNextDirEntry
Used to retrieve the directory structure.
Takes 2 parameters:
The base directory you are getting the listing for

The last directory entry returned

Assuming you had a directory structure that looked like this:

\Record\
\Record\Test.wav
\Record\Test.avi
\OfflineMedia\
\OfflineMedia\EmptyDir\
\OfflineMedia\retry.doc
\OfflineMedia\big.tga
\LocalMedia\AnotherDir\
\LocalMedia\test.aiff

The first call would only include the parameter '\'

http://localhost/VVWXMLNextDirEntry?\ Returns: <locator>\Record</locator> This will return the first FileDir XML structure that will include the first locator. To get the next item, return the same base path plus the new locator.

To descend into a sub directory, use the sub directory as the base path. To see what is in \Record

http://localhost/VVWXMLNextDirEntry?\?\Record
Returns: <locator>\Record\..</locator>
http://localhost/VVWXMLNextDirEntry?\?\OfflineMedia
Returns: <locator>\OfflineMedia</locator>
http://localhost/VVWXMLNextDirEntry?\?\LocalMedia
Returns: <locator>\LocalMedia</locator>
http://localhost/VVWXMLNextDirEntry?\Record\&\Record\..
Returns: <locator>END OF LIST</locator>
http://localhost/VVWXMLNextDirEntry?\Record\&\Record\Test.wav
Returns: <locator>\Record\Test.wav</locator>
http://localhost/VVWXMLNextDirEntry?\Record\&\Record\Test.avi
Returns: <locator>\Record\Test.avi</locator>
http://localhost/VVWXMLFileInfo
– Used to retrieve information on a specific file.

http://localhost/VVWXMLGetErrorMsg&#
– Used to return one error message from the current list. The first call will not include an error number (just VVWXMLGetErrorMsg). This will return an ErrorNumber to use to get the next message (VVWXMLGetErrorMsg&202 for instance), as will each subsequent call. When all the error messages have been returned, it will return an ErrorNumber of -1.

3.2 VVWLibrary.js Support Functions

Installed with videoQC, Net-X-SDI and VVW/DrasticDDR is a series of support/helper functions in a file called vvwlibrary.js under the js folder in the web server folder. These mostly encapsulate MediaCMD calls, but also include many helper functions that make using the API easier.

3.2.1 getHTTPObject()

Returns an AJAX HTTP object to be used to send and receive commands.

3.2.2 Standard HTTP Objects

var g_xmlHttp = getHTTPObject(); // Create the HTTP Object
var g_xmlHttpMs = getHTTPObject(); // Create the Last Change Ms HTTP Object
var g_xmlHttpVvwCmd = getHTTPObject(); // Create the VvwCmdHTTP Object

3.2.3 rightTrim(sString)

Trim any blank spaces from the end of the string

3.2.4 rightTrimSlash(sString)

Trim slashes from the end of a string

3.2.5 hasStdExt(sString)

Verify if we have a standard Extension

3.2.6 hasAnyExt(sString)

Verify if contains a dot for an extension

3.2.7 verifyChars(sString)

Convert # to %23

3.2.8 trimEnd(sString)

Trim the end of the string

3.2.9 toForwardSlashes(sString)

Convert backslashes to forward slashes

3.2.10 areCharsValid(sString)

Check if characters are all valid

3.2.11 getInnerText (node)

Get text value from a node for IE or Firefox/Mozilla

3.2.12 getBase(sString)

Get the base of a file path

3.2.13 d2h(d)

Decimal number to hex string

3.2.14 h2d(h)

Hex number to decimal string

3.2.15 tc2Sec(szTC)

Time code to seconds

3.2.16 bytes2String(MBytes)

Byte size to string

3.2.17 trimFrames(szTC)

Trim the frames from a time code string

3.2.18 parseByte16(str, offset)

Convert two hex characters (e.g. “AD”) to a byte (173)

3.2.19 toString16 (val, uppercase)

Convert a byte to a stream hex value

3.2.20 hexToBytes(hex)

Convert a hex string to a byte array

3.2.21 bytesToHex(bytes)

Convert a byte array to a hex string

3.2.22 getLastChangeMs()

Last change as a millisecond to the current clip log or time code/edit space.

3.2.23 sendVVWCmd(szCmd)

Send Transport Commands

3.2.24 vvwGetCurMs(lChannel)

Get current ms

3.2.25 vvwPlay(lChannel)

Send a play

3.2.26 vvwPlayOffsetAt(lChannel, dwPosition, lOffset, dwMs)

Play from position or offset at time

3.2.27 vvwPlayAtSpeed(lChannel, lSpeed, dwEnd)

Play at speed

3.2.28 vvwPlayFromTo(lChannel, dwFrom, dwTo, fDeferred, fLoop)

Play from to

3.2.29 vvwLoadClipFromFile(lChannel, sz8CharName, szFileName)

Load a clip from a file to an 8 char clip log name

3.2.30 vvwLoadClip(lChannel, sz8CharName, dwStart)

Load clip by its 8 char clip name

3.2.31 vvwBlankAllClips(lChannel)

Blank (remove) all clips

3.2.32 vvwBlankClip(lChannel, sz8CharName)

Blank (remove) clip

3.2.33 vvwSwitchClip(lChannel, sz8CharName, dwPosition, fUseFrameCount)

Switch clip

3.2.34 vvwPlayClip(lChannel, sz8CharName, fDeferred)

Play clip

3.2.35 vvwPlayClipFromTo(lChannel, sz8CharName, dwFrom, dwTo, fDeferred)

Play clip from to

3.2.36 vvwPlayAtMs(lChannel, dwMs)

Play at ms

3.2.37 vvwPlayFromToAtMs(lChannel, dwMs, dwFrom, dwTo)

Play from to at ms

3.2.38 vvwRecordAtMs(lChannel, dwMs, dwFrom, dwTo)

Record at ms

3.2.39 vvwFastForward(lChannel)

Fast forward

3.2.40 vvwFastReverse(lChannel)

Fast reverse

3.2.41 vvwPause(lChannel)

Pause

3.2.42 vvwSeek(lChannel, szPos)

Send Seek

3.2.43 vvwSeekRelative(lChannel, lFrameOffset)

Seek to a position relative to the current position

3.2.44 vvwStop(lChannel)

Stop

3.2.45 vvwRecord(lChannel)

Record

3.2.46 vvwRecordFromTo(lChannel, dwFrom, dwTo)

Record from to

3.2.47 vvwRecordStop(lChannel, sz8CharClipName, dwDuration)

Record Stop

3.2.48 vvwRecordStopFileName(lChannel, sz8CharClipName, szFileName, dwDuration)

Record Stop with filename

3.2.49 vvwRecordPresets(lChannel, lVidEdit, lAudEdit, lInfEdit)

Set record presets

3.2.50 vvwEject(lChannel)

Eject

3.2.51 vvwUpdateStatus(lChannel)

Get the current status

3.2.52 vvwGetState(lChannel)

Return the last known state (see vvwUpdateStatus)

3.2.53 vvwGetFlags(lChannel)

Return the last known flags (see vvwUpdateStatus)

3.2.54 vvwGetSpeed(lChannel)

Return the last known speed (see vvwUpdateStatus)

3.2.55 vvwGetPosition(lChannel)

Return the last known position (see vvwUpdateStatus)

3.2.56 vvwGetLastMs(lChannel)

Return the last known millisecond time (see vvwUpdateStatus)

3.2.57 vvwGetStart(lChannel)

Return the last known start (see vvwUpdateStatus)

3.2.58 vvwGetEnd(lChannel)

Return the last known end (see vvwUpdateStatus)

3.2.59 vvwGetClipName(lChannel)

Return the last known clip name (see vvwUpdateStatus)

3.2.60 vvwGetFileName(lChannel)

Return the last known file name (see vvwUpdateStatus)

3.2.61 vvwGetCurTC(lChannel)

Return the last known time code (see vvwUpdateStatus)

3.2.62 vvwGetCurState(lChannel)

Return the last known state (see vvwUpdateStatus)

3.2.63 vvwSetMetaData(vvwChannel, sz8CharClipName, vvwiInfoRequest, nValue, szValue)

Set a metadata value

3.2.64 vvwGetMetaData(vvwChannel, sz8CharClipName, vvwiInfoRequest)

Get a metadata value

3.2.65 vvwSaveMetaData(vvwChannel, saveType)

Save the current metadata to:
Type 0 = file, 3 = user, 4 = system

3.3 Basic Metadata Elements

```
const vvwiFileName = 0;
const vvwiNativeLocator = 1;
const vvwiUniversalName = 2;
const vvwiIP = 3;
const vvwiSourceLocator = 4;

const vvwiChannel = 5;
const vvwiChannelName = 6;
const vvwiChannelDescription = 7;
const vvwiTitle = 8;
const vvwiSubject = 9;
const vvwiCategory = 10;                    // <-- 10
const vvwiKeywords = 11;
const vvwiRatings = 12;
const vvwiComments = 13;
const vvwiOwner = 14;
const vvwiEditor = 15;
const vvwiSupplier = 16;
const vvwiSource = 17;
const vvwiProject = 18;
const vvwiStatus = 19;
const vvwiAuthor = 20;                              // <-- 20
const vvwiRevisionNumber = 21;
const vvwiProduced = 22;
const vvwiAlbum = 23;
const vvwiArtist = 24;
const vvwiComposer = 25;
const vvwiCopyright = 26;
const vvwiCreationData = 27;
const vvwiDescription = 28;
const vvwiDirector = 29;
const vvwiDisclaimer = 30;                  // <-- 30
const vvwiEncodedBy = 31;
const vvwiFullName = 32;
const vvwiGenre = 33;
const vvwiHostComputer = 34;
const vvwiInformation = 35;
const vvwiMake = 36;
const vvwiModel = 37;
```

```
const vvwiOriginalArtist = 38;
const vvwiOriginalFormat = 39;
const vvwiPerformers = 40;                    // <-- 40
const vvwiProducer = 41;
const vvwiProduct = 42;
const vvwiSoftware = 43;
const vvwiSpecialPlaybackRequirements = 44;
const vvwiTrack = 45;
const vvwiWarning = 46;
const vvwiURLLink = 47;
const vvwiEditData1 = 48;
const vvwiEditData2 = 49;
const vvwiEditData3 = 50;                     // <-- 50
const vvwiEditData4 = 51;
const vvwiEditData5 = 52;
const vvwiEditData6 = 53;
const vvwiEditData7 = 54;
const vvwiEditData8 = 55;
const vvwiEditData9 = 56;
const vvwiVersionString = 57;
const vvwiManufacturer = 58;
const vvwiLanguage = 59;
const vvwiFormat = 60;                                // <-- 60
const vvwiInputDevice = 61;
const vvwiDeviceModelNum = 62;
const vvwiDeviceSerialNum = 63;
const vvwiReel = 64;
const vvwiShot = 65;
const vvwiTake = 66;
const vvwiSlateInfo = 67;
const vvwiFrameAttribute = 68;
const vvwiEpisode = 69;
const vvwiScene = 70;                                 // <-- 70
const vvwiDailyRoll = 71;
const vvwiCamRoll = 72;
const vvwiSoundRoll = 73;
const vvwiLabRoll = 74;
const vvwiKeyNumberPrefix = 75;
const vvwiInkNumberPrefix = 76;
const vvwiPictureIcon = 77;
const vvwiProxyFile = 78;
const vvwiCustomMetadataBlockPointer = 79;
const vvwiImageInfo = 80;
```

```
const vvwiUMID = 81;
const vvwiEND_OF_STRINGS = 82;

const vvwiNumericStart = 4096;//0x1000,
const vvwiTimeCode = 4097;
const vvwiUserBits = 4098;
const vvwiVITCTimeCode = 4099;
const vvwiVITCUserBits = 4100;
const vvwiVITCLine3 = 4101;
const vvwiPosterFrame = 4102;
const vvwiAFrame = 4103;
const vvwiAspectRatio = 4104;
const vvwiOriginalRate = 4105;
const vvwiOriginalScale = 4106;   //
const vvwiConversions = 4107;
const vvwiVersionNumber = 4108;
const vvwiFileSize = 4109;
const vvwiFileDate = 4110;
const vvwiFileTime = 4111;
const vvwiSequenceNumber = 4112;
const vvwiTotalStreams = 4113;
const vvwiTotalLength = 4114;
const vvwiFilmManufacturerCode = 4115;
const vvwiFilmTypeCode = 4116;       //
const vvwiWhitePoint = 4117;
const vvwiBlackPoint = 4118;
const vvwiBlackGain = 4119;
const vvwiBreakPoint = 4120;
const vvwiGamma1000 = 4121;
const vvwiTagNumber = 4122;
const vvwiFlags = 4123;
const vvwiTimeCodeType = 4124;
const vvwiLTCTimeCodeType = 4125;
const vvwiVITCTimeCodeType = 4126;   //
const vvwiProdDate = 4127;
const vvwiUniqueID = 4128;
const vvwiCustomMetadataBlockType = 4129;
const vvwiCustomMetadataBlockSize = 4130;
const vvwiNorthSouthEastWest = 4131;
const vvwiLatitude = 4132;
const vvwiLongitude = 4133;
const vvwiExposure = 4134;
const vvwiRedGain = 4135;
```

```
const vvwiBlueGain = 4136;          //
const vvwiWhiteBalance = 4137;
const vvwiMatrix = 4138;
const vvwiGreenGain = 4139;
/*
const vvwiVideoWidth = 65536;//0x10000,
const vvwiVideoHeight,
const vvwiVideoPlanes,
const vvwiVideoBitCount,
const vvwiVideoCompression,
const vvwiVideoSizeImage,
const vvwiVideoXPelsPerMeter,
const vvwiVideoYPelsPerMeter,
const vvwiVideoClrUsed,
const vvwiVideoClrImportant,
const vvwiVideoReserved,
const vvwiVideoFccType,
const vvwiVideoFccHandler,
const vvwiVideoFlags,
const vvwiVideoCaps,
const vvwiVideoPriority,
const vvwiVideoLanguage,
const vvwiVideoScale,
const vvwiVideoRate,
const vvwiVideoStart,
const vvwiVideoLength,
const vvwiVideoInitialFrames,
const vvwiVideoSuggestedBufferSize,
const vvwiVideoQuality,
const vvwiVideoSampleSize,
const vvwiVideoEditCount,
const vvwiVideoFormatChangeCount,
const vvwiVideoPitch,
const vvwiVideoDrFlags,
const vvwiVideoFileType,
const vvwiVideoResDrastic,
const vvwiAudioType,
const vvwiAudioChannels,
const vvwiAudioFrequency,
const vvwiAudioBits,
const vvwiLastElementPlus1
        // DO NOT ADD ANYTHING BELOW vvwiLastElementPlus1
*/
```

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