



DivX Media Format XML Reference

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1 Introduction

This document should be used by developers who want to create a DivX Media Format file, so that menus will display on DivX Certified players and enhance the DivX video experience. This document contains the specifications for the XML document that enhance DivX AVI file specifications.

2 Menus

This section provides specifications for the interactive menus provided in the DivX Media Format.

2.1 XML Structural Overview

To enable the rich interactive menu experience requires hand-shaking between many different video streams and/or button overlays as well as offer multi-lingual capabilities. It is for these reasons the DivX Media Format XML specification is so strict. Once the application that reads in the DivX Media Format XML file, it will parse the file validating all its information as well as ensure all the required information is contained within the document.

All Media track references from background video, audio, subtitles, and PlayAction objects are contained within the Media object. This object represents the "Model" layer of the DivX Media model. The Media object contains MenuTracks and Title objects. The MenuTracks contain all Media Tracks referenced by the Menu, and Button overlay references. A Title object contains Chapter objects and chapter objects contain the MediaTracks that can be played for this chapter. A MediaTrack represents a time slice of a single track within a DivX Media Format file. MediaTracks can represent video, audio or subtitle media. All MediaTracks reference MediaSource objects. MediaSource objects represent the actual avi media. The MediaSource contains a reference to the source media file.

Individual menus contain the following sub-menu components:

- a) Background video layer reference
- b) Background audio reference
- c) One or more Button Objects

Buttons contain the following features:

- Overlay foreground subtitle reference
- References to other buttons, used when navigating using the up, down, left and right arrows.
- Rectangle defining the location of the button
- One or more Action objects

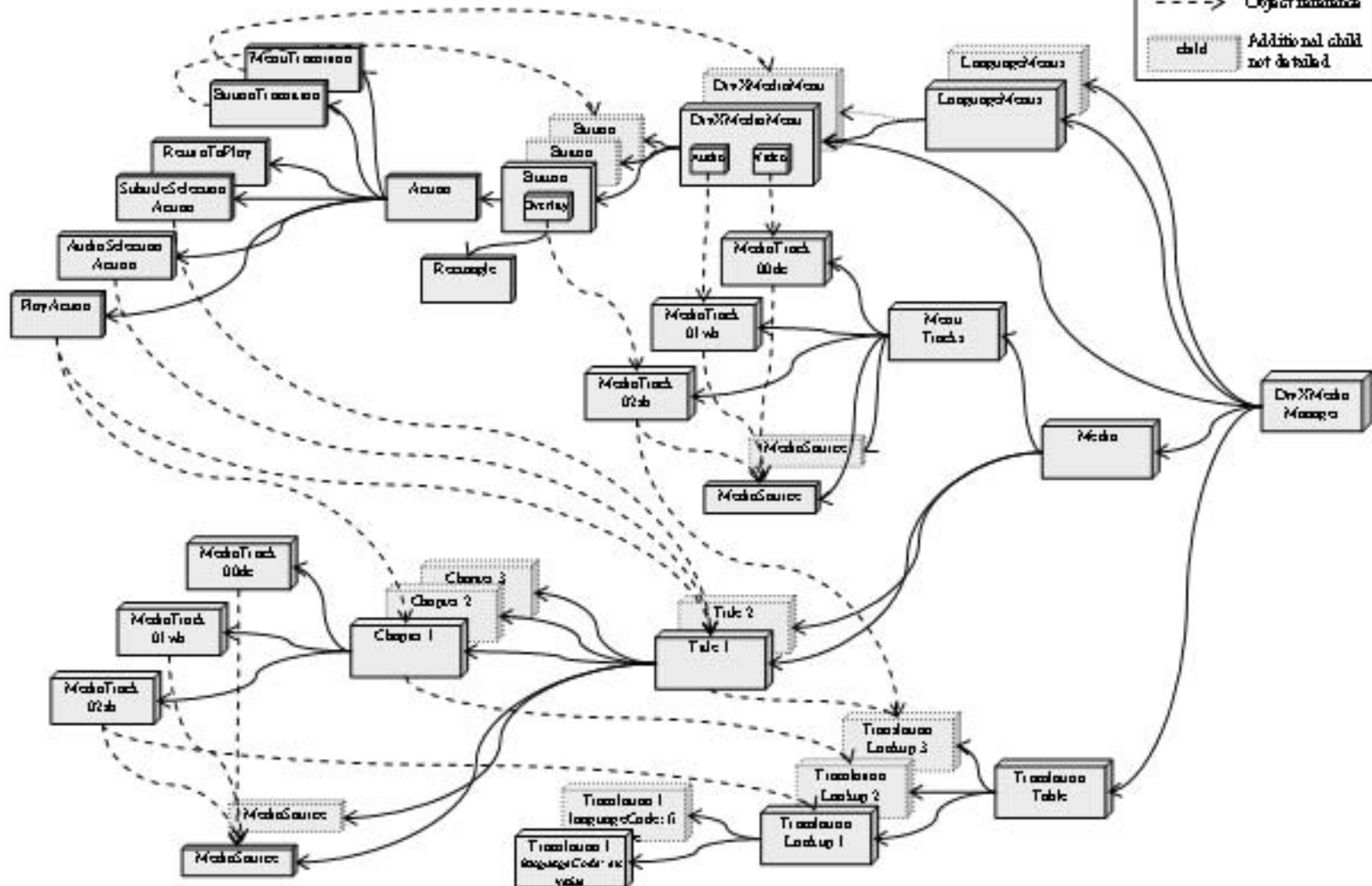
Action Objects contain a list of sub-actions that are executed when the button is selected. These include the following:

- MenuTransition: Transition to another menu
- ButtonTransition: Transition to another button within the same menu
- PlayFromCurrentOffset: Returns to the point of play just before the menu was invoked
- SubTitleSelection: Selects a subtitle media track
- AudioSelection: Selects an audio media track
- PlayAction: Transitions to a specific time in a title track and begins play, PlayAction references Chapter objects in the Media node.

DivX Menu Format 1.0 Object Model

key

- Children by containment
- - - - -> Object reference
- child Additional child not detailed



2.2 XML components

2.2.1 In this Section

This section describes in detail each type of node contained in the DivX Media Format XML model, its hierarchy within the document, its purpose, and what information it contains. This section describes each of the node types that comprise the DivX Media Format, relevant to Version 1 of the XML Model. These descriptions detail the attributes, parents, children, and limitations of each node. The types are listed below:

2.2.2 DivXMediaManager

The first and most important node is the DivxMediaManager. This is the root node and it's required. The DivxMediaManager node contains critical information for the overall menu playback, such as the default language, versioning information.

2.2.2.1 Attributes

Name	Description	Type	Required
objectID	The Object ID for this object. Negative values are reserved.	integer	Yes
version	The version of the XML. Must be 1.0.	3 characters	Yes
menuVersion	Indicates the version of the menu. Negative version values are reserved. Must be 1.	integer	Yes
startingMenuID	The Object ID of the menu (DivXMediaMenu) to be played if no LanguageMenu is found which matches the player's default language. The DivXMediaMenu must be a child of the DivxMediaManager node.	integer	No
defaultLanguage	The default language of the menus. It must be one of the language codes specified in the <i>Language Codes</i> section.	2 characters	Yes

2.2.2.2 Parents

None.

2.2.2.3 Children

LanguageMenus, Media, DivXMediaMenu, TranslationTable, Metadata.

2.2.3 LanguageMenus

The LanguageMenus contains information about a menu formatted in a given language.

2.2.3.1 Attributes

Name	Description	Type	Required
objectID	The Object ID for this node. Negative version values are reserved.	integer	Yes
languageCode	The 2 letter code indicating the language of the menu set. It must be one of the language codes specified in the <i>Language Codes</i> section.	2 characters	Yes
startingMenuID	The Object ID of the menu (DivXMediaMenu) to be played first. Typically is an intro sequence to the root menu. The referenced DivXMediaMenu must be a child of a LanguageMenus node. Negative values are reserved.	integer	Yes
rootMenuID	The Object ID for the default menu (DivXMediaMenu). The referenced DivXMediaMenu must be a child of a LanguageMenus node, but not limited to only this LanguageMenu. Negative values are reserved.	integer	Yes

2.2.3.2 Parents

DivXMediaManager.

2.2.3.3 Children

DivXMediaMenu.

2.2.3.4 Limitations

Limited to one per language code. There are 136 support language codes, and therefore the maximum in one file is 136. Please see *Language Code* section for details on the language codes.

2.2.3.5 Notes

Each LanguageMenu specifies a root menu, representing by the RootMenu ID member of the LanguageMenu data structure. The root menu's domain is limited to the LanguageMenu the menu is contained within. This is the menu to be displayed when the [MENU] key on a DVD remote control is pressed. Please note, if a [TITLE MENU] key is available, it should not be directly mapped to this menu ID.

2.2.4 DivXMediaMenu

The DivxMediaMenu defines a specific menu screen within the menu system.

2.2.4.1 Attributes

Name	Description	Type	Required
objectID	The Object ID for this node. Negative values are reserved.	integer	Yes
backgroundVideo ID	The Object ID of the background video (MediaTrack) of the menu. This must refer to a child MediaTrack in the parent MenuTracks node. Negative values are reserved.	integer	Yes
backgroundAudio ID	The Object ID of the background audio (MediaTrack) of the menu. This must refer to a child MediaTrack in the parent MenuTracks node. A value of -1 indicates this menu has no audio.	integer	Yes
startingMenuID	The Object ID of the button (ButtonMenu) initially selected. The ButtonMenu node must be a child of this DivxMediaMenu node. Negative values are reserved.	integer	Yes
enterAction	The Object ID of the list of actions (Action) to perform upon the menu starting. The Action node must be a child of this DivxMediaMenu node. A value of -1 indicates no enter actions are present.	integer	Yes
exitAction	The Object ID of the list of actions (Action) to perform upon the menu ending playback. The Action node must be a child of this DivxMediaMenu node. A value of -1 indicates no exit actions are present.	integer	Yes
menuType	The type of menu. The options are audio, chapter, other, subtitle, title.	string	Yes
menuName	The name of the menu.	integer	No

2.2.4.2 Parents

DivXMediaManager, LanguageMenus.

2.2.4.3 Children

ButtonMenu, Action.

2.2.4.4 Limitations

Limited to 1000 in one file.

2.2.4.5 Notes

Each menu has an associated type. These are used to identify important or significant menus, for example the menu to be displayed when the viewer requests the chapter menu. The types' domain is limited to the LanguageMenu the menu is contained within. The type is a string stored in the MenuType member of the DivXMediaMenu data structure. Regardless of menu type, audio/subtitle track changes and trick play functions such as fast forward, rewind, pause/resume, slow and etc. are not permissible during menu playback,. Full termination or full stop of menu playback is allowed for all menus. Additional restrictions may apply to specific menu type as stated below. The following types are supported:

MenuType	Description	Limitations
title	Menu to select a title. This is typically mapped to the [TITLE] or [TITLE MENU] key on a DVD remote control.	1 per LanguageMenu.
chapter	Menu to select a chapter. This is typically mapped to the [CHAPTER] or [CHAPTER MENU] key on a DVD remote control.	1 per LanguageMenu.
audio	Menu to select the active audio track.	1 per LanguageMenu.
subtitle	Menu to select the active subtitle track.	1 per LanguageMenu.
force	Menu which any interruption of normal playback is not allowed. In addition to common menu playback restrictions, user issued menu invocations such as, by pressing the [MENU] key, are explicitly prohibited during playback of "force" menus.	No limit per LanguageMenu.
other	Any other type of menu. Typically these are used for menu transitions and auxiliary menus. If additional title, chapter, audio and subtitle menus are required, they must be typed as "other". Only the leading menu should be typed as "title", "chapter", "audio" or "subtitle", respectively.	No limit per LanguageMenu.

2.2.5 ButtonMenu

The ButtonMenu represent a single button on a menu screen.

2.2.5.1 Attributes

Name	Description	Type	Required
objectID	The Object ID for this node. Negative values are reserved.	integer	Yes
overlayID	The Object ID of the overlay (MediaTrack) to be displayed when this button is selected. This must refer to a child MediaTrack in the parent MenuTracks node. Negative values are reserved.	integer	Yes
upAction	The Object ID of the button (ButtonMenu) to become active if the user presses the up button. This must refer to a child MediaTrack in the parent MenuTracks node. A value of -1 indicates no up action is present.	integer	No
downAction	The Object ID of the button (ButtonMenu) to become active if the user presses the down button. This must refer to a child MediaTrack in the parent MenuTracks node. A value of -1 indicates no down action is present.	integer	No
leftAction	The Object ID of the button (ButtonMenu) to become active if the user presses the left button. This must refer to a child MediaTrack in the parent MenuTracks node. A value of -1 indicates no left action is present.	integer	No
rightAction	The Object ID of the button (ButtonMenu) to become active if the user presses the right button. This must refer to a child MediaTrack in the parent MenuTracks node. A value of -1 indicates no right action is present.	integer	No
selectAction	The Object ID of the list of actions (Action) to perform upon the selection of this button. This must refer to a child MediaTrack in the parent MenuTracks node. A value of -1 indicates no select action is present.	integer	Yes

2.2.5.2 Parents

DivXMediaMenu.

2.2.5.3 Children

Action, MenuRectangle.

2.2.5.4 Limitations

Limited to 100 per parent DivXMediaMenu node.

2.2.6 MenuRectangle

The MenuRectangle is used for tracking mouse actions in a PC video player, it represents a rectangle for the active area of a button.

2.2.6.1 Attributes

Name	Description	Type	Required
objectID	The Object ID for this node. Negative values are reserved.	integer	Yes
left	Left coordinate of the rectangle. This is in relation to the menu video resolution, in pixels. Negative values are reserved.	integer	Yes
top	Top coordinate of the rectangle. This is in relation to the menu video resolution, in pixels. Negative values are reserved.	integer	Yes
width	The width of the rectangle. This is in relation to the menu video resolution, in pixels. Negative values are reserved.	integer	Yes
height	The height of the rectangle. This is in relation to the menu video resolution, in pixels. Negative values are reserved.	integer	Yes

2.2.6.2 Parents

ButtonMenu.

2.2.6.3 Children

None.

2.2.6.4 Limitations

Limited to one per parent ButtonMenu node.

2.2.7 Media

The Media is a container for nodes which relate to the playback of a particular media within the file.

2.2.7.1 Attributes

Name	Description	Type	Required
objectID	The Object ID for this node. Negative values are reserved.	integer	Yes

2.2.7.2 Parent

DivXMediaManager.

2.2.7.3 Children

MenuTracks, Title.

2.2.7.4 Limitations

One.

2.2.8 MediaSource

The MediaSource defines an actual media. This is information relating to the actual RIFF that contains the media source data.

2.2.8.1 Attributes

Name	Description	Type	Required
objectID	The Object ID for this node. Negative values are reserved.	integer	Yes
mediaType	The types of data source referenced by the location attribute. It must be "menuAvi" for an *.avi/*.divx file formatted for menuing, or "featureAvi" for an .avi/.divx file formatted for a title.	string	Yes
location	The path name of the data source. The path name must be full and not relative.	string	Yes

2.2.8.2 Parents

MenuTracks, Title.

2.2.8.3 Children

None.

2.2.8.4 Limitations

No limit.

2.2.9 MediaTrack

The MediaTrack identifies the Track in the target file.

2.2.9.1 Attributes

Name	Description	Type	Required
objectID	The Object ID for this node. Negative values are reserved.	integer	Yes
mediaSourceID	The Object ID of the media source (MediaSource) which contains the data described. Negative values are reserved.	integer	Yes
trackID	A track identifier. This refers to the stream identifier in the media source referenced by MediaSource ID. The Track ID is four characters ('# ₁ # ₀ a ₁ a ₀ ') in syntax, where 'a ₁ a ₀ ' are letters and '# ₁ # ₀ ' is numeric.	string	Yes
startFrame	The starting frame for the track described. *This attribute is required for video and subtitle overlay mediaTracks.	integer	Yes*
endFrame	The ending frame for the track described. *This attribute is required for video and subtitle overlay mediaTracks.	integer	Yes*
languageCode	The 2 character code for language of the media. It must be one of the language codes specified in the <i>Language Codes</i> section.	2 characters	Yes
translationLookup ID	The Object ID of the TranslationLookup node which contains strings used to describe the media. Negative values are reserved.	integer	Yes.
type	The type of media described, either audio, video or subtitle.	integer	Yes

2.2.9.2 Parents

Chapter, MenuTracks, Title.

2.2.9.3 Children

None.

2.2.9.4 Limitations

Maximum of 17 per parent Chapter or parent Title nodes (1 video track, 8 audio tracks, 8 subtitle tracks). There is no limit for the parent MenuTracks node.

2.2.10 Action

The Action node is a container for action nodes which influence the behavior of menu and feature playback. The children action nodes contained within an Action node are executed in the order they are stored as children. Each action node has their own execution and limitations – please see them individually for more details.

2.2.10.1 Attributes

Name	Description	Type	Required
ObjectID	The Object ID for this node. Negative values are reserved.	integer	Yes

2.2.10.2 Parents

ButtonMenu, DivXMediaMenu.

2.2.10.3 Children

AudioSelectAction, SubtitleSelectAction, PlayAction, PlayFromCurrentOffsetAction, MenuTransitionAction, ButtonTransitionAction.

2.2.10.4 Limitations

Limited to one per parent ButtonMenu node, and two per parent DivXMediaMenu node (one for both enterAction and exitAction).

2.2.10.5 Notes

The Action node is also commonly known as an action list. The following types of action lists are supported:

1. Enter action list: these are referenced by the enterAction member of a DivXMediaMenu node. This list may contain the following actions:
 - one or more AudioSelectAction
 - one or more SubtitleSelectAction
2. Exit action list: these are referenced by the exitAction member of a DivXMediaMenu node. This list may contain the following actions:
 - one or more AudioSelectAction
 - one or more SubtitleSelectAction
 - one MenuTransitionAction
 - one ButtonTransitionAction
 - one PlayAction
 - one PlayFromCurrentOffsetAction
3. Select action list: these are referenced by the selectAction member of a ButtonMenu node. This list may contain the following actions:
 - one or more AudioSelectAction
 - one or more SubtitleSelectAction
 - one MenuTransitionAction

- one ButtonTransitionAction
- one PlayAction
- one PlayFromCurrentOffsetAction

The actions in the lists above must adhere to the following;

- AudioSelectAction, SubtitleSelectAction and ButtonTransitionAction may follow each other and may be in any order.
- AudioSelectAction and SubtitleSelectAction must precede any of the other type of actions.
- Upon execution of a PlayAction or PlayFromCurrentOffsetAction no following action nodes are executed.
- PlayAction and PlayFromCurrentOffsetAction are mutually exclusive.
- Only a ButtonTransitionAction may follow a MenuTransitionAction. The ButtonTransitionAction will override the default StartingMenuItemID of the target menu.

2.2.11 SubtitleSelectAction

SubtitleSelectAction is a more specialized user action case in which the user is selecting a subtitle track.

2.2.11.1 Attributes

Name	Description	Type	Required
objectID	The Object ID for this node. Negative values are reserved.	integer	Yes
titleID	The Object ID of the title (Title) to which the MediaTrack referenced by TrackID belongs.	integer	Yes
trackID	A subtitle track identifier. This refers to the stream identifier used in a MediaTrack node. The MediaTrack node must be associated with the Title node referenced by Title ID. The Track ID for subtitle is four characters in '#_#_#_#sb' syntax, where the '#_#_#_#' denotes the stream number.	4 characters	Yes

2.2.11.2 Parents

Action.

2.2.11.3 Children

None.

2.2.11.4 Limitations

No limit.

2.2.12 AudioSelectAction

Identical to SubtitleSelectAction except for the selection of Audio tracks.

2.2.12.1 Attributes

Name	Description	Type	Range
objectID	The Object ID for this node. Negative values are reserved.	integer	Yes
titleID	The Object ID of the title (Title) to which the MediaTrack referenced by TrackID belongs .	integer	Yes
trackID	An audio track identifier. This refers to the stream identifier used in a MediaTrack node. The MediaTrack node must be associated with the Title node referenced by TitleID. The track ID for audio is four characters in '# ₁ # ₀ wb' syntax, where the '# ₁ # ₀ ' denotes the stream number.	4 characters	Yes

2.2.12.2 Parents

Action.

2.2.12.3 Children

None.

2.2.12.4 Limitations

No limit.

2.2.13 PlayAction

The PlayAction defines the starting point for a media. Encountering this node means that the user is requesting media playback.

2.2.13.1 Attributes

Name	Description	Type	Required
objectID	The Object ID for this node. Negative values are reserved.	integer	Yes
titleID	The Object ID of the title (Title) to playback. The Title must be a child in the Media node. Negative values are reserved.	integer	Yes
mediaObjectID	The Object ID for the chapter point (Chapter) for the title specified in titleID to playback, or if the title contains no chapter points, the Object ID of the title (Title). Negative values are reserved.	integer	Yes

2.2.13.2 Parents

Action.

2.2.13.3 Children

None.

2.2.13.4 Limitations

Limited to one per parent Action node.

2.2.14 PlayFromCurrentOffset

PlayFromCurrentOffset is identical to a PlayAction event, but occurs when a user is requesting to return to a playback already in progress, e.g., after selecting a new subtitle or audio track.

2.2.14.1 Attributes

Name	Description	Type	Required
objectID	The Object ID for this node. Negative values are reserved.	integer	Yes
titleID	The Object ID of the title (Title) to playback. The Title must be a child in the Media node. Negative values are reserved.	integer	Yes
mediaObjectID	The Object ID for the chapter point (Chapter) for the title specified in titleID to playback, or if the title contains no chapter points, the Object ID of the title (Title). Negative values are reserved.	integer	Yes

2.2.14.2 Parents

Action.

2.2.14.3 Children

None.

2.2.14.4 Limitations

Limited to one per parent Action node.

2.2.15 MenuTransitionAction

A MenuTransitionAction defines the new menu to play when transitioning between menus.

2.2.15.1 Attributes

Name	Description	Type	Required
objectID	The Object ID for this node. Negative values are reserved.	integer	Yes
menuID	The Object ID of the menu (DivXMediaMenu) into which to transition. The DivXMediaMenu must be a child of a LanguageMenus node or a child of the DivXMediaManager. The DivXMediaMenu is not limited to the current LanguageMenus. Negative values are reserved.	integer	Yes

2.2.15.2 Parents

Action.

2.2.15.3 Children

None.

2.2.15.4 Limitations

Limited to one per parent Action node.

2.2.16 ButtonTransitionAction

A ButtonTransitionAction is an action which switches the active button selection. This is typically used to provide represent feedback to user actions or minimize required user navigation required after switching an audio or subtitle track from a menu.

2.2.16.1 Attributes

Name	Description	Type	Required
objectID	The Object ID for this node. Negative values are reserved.	integer	Yes
buttonMenuID	The Object ID of the button (ButtonMenu) to become active. The ButtonMenu referenced must reside in the DivXMenuMedia which this ButtonTransitions node is nested. Similarly, if this Button TransitionAction occurs after a MenuTransitionAction, the ButtonMenu referenced must reside within the scope of the targeted DivXMenuMedia. Negative values are reserved.	integer	Yes

2.2.16.2 Parents

Action.

2.2.16.3 Children

None.

2.2.16.4 Limitations

No limit per Action node.

2.2.17 MenuTracks

MenuTracks is a container for MediaSource and MediaTrack elements. These elements describe the audio, video and subtitle tracks for menus.

2.2.17.1 Attributes

Name	Description	Type	Required
ObjectID	The Object ID for this node. Negative values are reserved.	integer	Yes

2.2.17.2 Parents

Media.

2.2.17.3 Children

MediaSource, MediaTrack.

2.2.17.4 Limitations

Limited to one per Media node.

2.2.18 Title

A Title defines an available title within the file. There may be multiple titles.

2.2.18.1 Attributes

Name	Description	Type	Required
objectID	The Object ID for this node. Negative values are reserved.	integer	Yes
translationLookupID	The Object ID of the TranslationLookup node which contains strings used to describe this title. Negative values are reserved.	integer	Yes
defaultAudioTrack	A track identifier. This refers to the TrackID member in a child MediaTrack. The track ID for audio is four characters in '# ₁ # ₀ wb' syntax, where the '# ₁ # ₀ ' denotes the stream number.	4 characters	Yes
defaultSubtitleTrack	A track identifier. This refers to the TrackID member in a child MediaTrack. The track ID for subtitle is four UTF-16 chars in '# ₁ # ₀ sb' syntax, where the '# ₁ # ₀ ' denotes the stream number.	4 characters	Yes

2.2.18.2 Parents

Media.

2.2.18.3 Children

Chapter, MediaSource, MediaTrack.

2.2.18.4 Limitations

Limited to 100.

2.2.19 Chapter

The Chapter represents chapters in a title. There will be a Chapter node for each chapter in a title.

2.2.19.1 Attributes

Name	Description	Type	Required
objectID	The Object ID for this node. Negative values are reserved.	integer	Yes
translationLookup ID	The Object ID of the TranslationLookup node which contains strings used to describe this chapter. Negative values are reserved.	integer	Yes

2.2.19.2 Parents

Title.

2.2.19.3 Children

MediaTrack.

2.2.19.4 Limitations

Limited to 100 per Title.

2.2.19.5 Notes

The purpose of the Chapter node is to specify a start and end time for a chapter point in a title, and associate a text label to the chapter, eg. "Chapter 2". The chapter's start and end time is defined by one of its children; a MediaTrack with the type of "video". Specifically the MediaTrack's startFrame and endFrame values.

2.2.20 TranslationTable

TranslationTable is a container for TranslationLookup nodes.

2.2.20.1 Attribute

Name	Description	Type	Required
objectID	The Object ID for this node. Negative values are reserved.	integer	Yes

2.2.20.2 Parents

DivXMediaManager.

2.2.20.3 Children

TranslationLookup.

2.2.20.4 Limitations

Limited to one.

2.2.21 TranslationLookup

The TranslationLookup container is a lookup table of translations to a specified language.

2.2.21.1 Attribute

Name	Description	Type	Required
objectID	The Object ID for this node. Negative values are reserved.	integer	Yes

2.2.21.2 Parents

TranslationTable.

2.2.21.3 Children

Translation.

2.2.21.4 Limitations

No limit.

2.2.22 Translation

Translations represent a string for a single localization.

2.2.22.1 Attributes

Name	Description	Type	Required
objectID	The Object ID for this node. Negative values are reserved.	integer	Yes
languageCode	The 2 character code for the language of the menu set. It must be one of the language codes specified in the <i>Language Codes</i> section.	2 characters	Yes
value	The actual translation string.	string	Yes

2.2.22.2 Parents

TranslationLookup.

2.2.22.3 Children

None.

2.2.22.4 Limitations

Limited to one per language code, and therefore the maximum in one parent TranslationLookup node is 136.

3 Internationalization

DivX technology is language and country agnostic and not specific to any region – it embraces the true value of electronic delivery and IP-based networks (ie. the Internet). Language and country codes are a form of metadata used to customize the viewing experience to the native language of the viewer, including interactive menuing and multiple tracks. For example, when switching audio tracks the description of the track is shown on screen in the native language of the viewer.

3.1 Language Codes

Language codes are two-letter codes for the representation of names of languages. The codes cover most of the major languages of the world that are not only mostly frequently represented in the total body of the world's literature, but which also comprise a considerable volume of specialized languages and terminologies.

The codes below are devised from ISO 639:1988 – Code for the representation of names of languages. The codes are not case-sensitive. There are 136 supported language codes. The language codes must be in lower case. The localization of the language code description is allowed and recommended.

Code	English Description	Code	English Description	Code	English Description
aa	Afar	ie	Interlingue	rn	Kirundi
ab	Abkhazian	ik	Inupiak	ro	Romanian
af	Afrikaans	in	Indonesian	ru	Russian
am	Amharic	is	Icelandic	rw	Kinyarwanda
ar	Arabic	it	Italian	sa	Sanskrit
as	Assamese	iw	Hebrew	sd	Sindhi
ay	Aymara	ja	Japanese	sg	Sangro
az	Azerbaijani	ji	Yiddish	sh	Serbo-Croatian
ba	Bashkir	jw	Javanese	si	Singhalese
be	Byelorussian	ka	Georgian	sk	Slovak
bg	Bulgarian	kk	Kazakh	sl	Slovenian
bh	Bihari	kl	Greenlandic	sm	Samoan
bi	Bislama	km	Cambodian	sn	Shona
bn	Bengali	kn	Kannada	so	Somali
bo	Tibetan	ko	Korean	sq	Albanian
br	Breton	ks	Kashmiri	sr	Serbian
ca	Catalan	ku	Kurdish	ss	Siswati
co	Corsican	ky	Kirghiz	st	Sesotho
cs	Czech	la	Latin	su	Sudanese
cy	Welsh	ln	Lingala	sv	Swedish
da	Danish	lo	Laothian	sw	Swahili
de	German	lt	Lithuanian	ta	Tamil
dz	Bhutani	lv	Latvian	te	Tegulu
el	Greek	mg	Malagasy	tg	Tajik
en	English	mi	Maori	th	Thai
eo	Esperanto	mk	Macedonian	ti	Tigrinya
es	Spanish	ml	Malayalam	tk	Turkmen
et	Estonian	mn	Mongolian	tl	Tagalog
eu	Basque	mo	Moldavian	tn	Setswana
fa	Persian	mr	Marathi	to	Tonga
fi	Finnish	ms	Malay	tr	Turkish
fj	Fiji	mt	Maltese	ts	Tsonga
fo	Faeroese	my	Burmese	tt	Tatar
fr	French	na	Nauru	tw	Twi
fy	Frisian	ne	Nepali	uk	Ukrainian
ga	Irish	nl	Dutch	ur	Urdu
gd	Gaelic	no	Norwegian	uz	Uzbek
gl	Galician	oc	Occitan	vi	Vietnamese
gn	Guarani	om	Oromo	vo	Volapuk
gu	Gujarati	or	Oriya	wo	Wolof
ha	Hausa	pa	Punjabi	xh	Xhosa
hi	Hindi	pl	Polish	yo	Yoruba
hr	Croatian	ps	PashtoPushto	zh	Chinese
hu	Hungarian	pt	Portuguese	zu	Zulu
hy	Armenian	qu	Quechua		
ia	Interlingua	rm	Rhaeto-Romance		