	Relation	QuickTime	How to do the mapping	Datatype	XPath
Descriptive Properties (Core Set)					
Identification					
identifier	N/A				N/A
title	exact	The title of the movie file content. This is typically a single text line.	key: com.apple.quicktime.title value: string containing title	A UTF-8 string. Can have multiple values with different language and country code designations.	N/A
language	N/A				N/A
locator	N/A				N/A
Creation					

	contributor	related	Name of the artist or artists who created the movie file content.	key: com.apple.quicktime.artist value: string containing artist name	A UTF-8 string. Can have multiple values with different language and country code designations.	N/A
		related	Name of the director of the movie content.	key: com.apple.quicktime.director value: string containing director name	A UTF-8 string. Can have multiple values with different language and country code designations.	N/A
	creator	related	Name of the author of the movie file content.	key: com.apple.quicktime.author value: string containing author name	A UTF-8 string. Can have multiple values with different language and country code designations.	N/A

date	exact	The date the movie file content was created.	key: com.apple.quickti me.creationdate value: string containing creation date	A UTF-8 string. Can have multiple values with different language and country code designations.	N/A
location	related	Geographic point location by coordinates as defined in ISO 6709:2008.	key: com.apple.quickti me.location.ISO67 09 value: a string containing location coordinates	Defined in ISO 6709:2008.	N/A
	related	Name of the location.	key: com.apple.quickti me.location.name value: a string containing the name of the location	A UTF-8 string. Can have multiple values with different language and country code designations.	N/A

		related	The astronomical body, for compatibility with the 3GPP format. 'earth' is assumed if not present.	key: com.apple.quicktime.location.body value: a string containing the astronomical body name	A UTF-8 string. Can have multiple values with different language and country code designations.	N/A
		related	A descriptive note.	key: com.apple.quicktime.location.note value: a string containing descriptive note	A UTF-8 string. Can have multiple values with different language and country code designations.	N/A

		related	A single byte, binary value containing a value from the set: 0 indicates "shooting location", 1 indicates "real location", 2 indicates "fictional location". Other values are reserved.	key: com.apple.quicktime.location.role value: an unsigned integer indicating location role	A big-endian unsigned integer in 1,2,3 or 4 bytes; size of value determines integer size.	N/A
		related	A date and time, stored using the extended format defined in ISO 8601:2004-Data elements and interchange format.	key: com.apple.quicktime.location.date value: a string containing the location date and time	Defined in ISO 8601:2004-Data elements and interchange format.	N/A

| | | related | A machine readable facing direction. Directions are specified as a string consisting of one or two angles, separated by a slash if two occur. The first is a compass direction, expressed in degrees and decimal degrees, optionally preceded by the characters "+" or "-", and optionally followed by the character "M". The direction is determined as accurately as possible; the nominal due north | key: com.apple.quicktime.direction.facing value: a string containing the facing direction | A UTF-8 string. This should not be tagged with a country or language code. | N/A |

		facing along a line of longitude of			
	related	A machine readable direction of motion. Directions are specified as a string consisting of one or two angles, separated by a slash if two occur. The first is a compass direction, expressed in degrees and decimal degrees, optionally preceded by the characters "+" or "-", and optionally followed by the character "M". The direction is determined as accurately as possible; the nominal due north	key: com.apple.quicktime.direction.motion value: a string containing the motion direction	A UTF-8 string. This should not be tagged with a country or language code.	N/A

			facing along a line of longitude of			

Content description						
description	exact	Description of the movie file content.	key: com.apple.quicktime.description value: string containing description	A UTF-8 string. Can have multiple values with different language and country code designations.	N/A	
keyword	exact	Keyword(s) associated with the movie file content.	key: com.apple.quicktime.keywords value: string containing keyword(s)	A UTF-8 string. Can have multiple values with different language and country code designations.	N/A	
		being straight down (and for these two cases, the compass direction is irrelevant).				

	genre	exact	Text describing the genre or genres to which the movie content conforms. There is no prescribed vocabulary for names of genres.	key: com.apple.quicktime.genre value: string containing genre(s)	A UTF-8 string. Can have multiple values with different language and country code designations.	N/A
	rating	related	A number, assigned by the user, that indicates the rating or relative value of the movie. This number can range from 0.0 to 5.0. A value of 0.0 indicates that the user has not rated the movie.	key: com.apple.quicktime.rating.user value: a number designating the rating	A big-endian 32-bit floating point value (IEEE754). The range of this number is 0.0 to 5.0, inclusive.	N/A
	Relational					
	relation	N/A				N/A

collection	related	Album or collection name of which the movie content forms a part.	key: com.apple.quicktime.album value: a string containing the album name	A UTF-8 string. Can have multiple values with different language and country code designations.	N/A
	related	A name indicating a user-defined collection that includes this movie.	key: com.apple.quicktime.collection.user value: a string containing the collection name	A UTF-8 string. Can have multiple values with different language and country code designations.	N/A
Rights					
copyright	exact	Copyright statement for the movie file content.	key: com.apple.quicktime.copyright value: a string containing the copyright statement	A UTF-8 string. Can have multiple values with different language and country code designations.	N/A

policy	N/A				N/A
Distribution					
publisher	exact	Name of publisher of movie file content.	key: com.apple.quicktime.publisher value: string containing publisher name	A UTF-8 string. Can have multiple values with different language and country code designations.	N/A
targetAudience	N/A				N/A
Fragments					
fragments	N/A				N/A
namedFragments	N/A				N/A
Technical Properties					

	frameSize	exact	The width and height fields from the track header box of that track. moov.trak.tkhd.(track width | track height)	If requested for a movie, and there is only one video track, or if requested for a specific video track, the width and height of that track. Otherwise, calculated as the spatial union of all non-empty track dimensions.	Width and height are 32-bit fixed-point integers of the form (16.16)	N/A

	compression	exact	The four-character codes from the video sample description/s in the track's sample description box (see QT file format). moov.track.mdia.minf.stbl.stsd. (sampledescription dataFormat)	Follow the box hierarchy inside the movie box, into each video or sound track's mdia/stbl/stsd, and then extract the 4-character codes from the video sample description or descriptions.	four character code(s)	N/A

	duration	exact	The duration field from the movie header (overall movie) or track header (for a track), divided by the timescale from the movie header. moov.mvhd.duration or moov.trak.tkhd.duration; divided by moov.mvhd.timescale	Find the movie header box (mvhd) and get the timescale field, and then retrieve the duration field from the movie or track header (mvhd, tkhd) as appropriate, and divide.	float (after division), rational made up of two integers (as stored)	N/A

	format	exact	video/ quicktime (valid for all resources)		MIME type	N/A
		exact	If 'ftyp' atom is present in movie file, it will include the four character code 'qt ' in Compatible _Brands[]. It may also be set as Major_Bran d of ftyp atom.	Find the 'ftyp' atom is present. Check for 'qt ' (not two trailing ASCII spaces) in ftyp.Compatibl e_Brands[] to determine this is a QuickTime movie resource.	Four character code	N/A

| samplingRate | usually exact | The field sample rate in the version 0 or 1 sound sample description(s) for the movie sound tracks. This is a 16.16 integer with the fractional 16 bits, fractional bits may be non-zero. moov.trak.mdia.minf.stbl.stsd. (sound sample description v0/ v1 sampleR | Follow the box hierarchy inside the movie box, into each sound track's mdia/stbl/stsd, and locate the sound description. Confirm the sound description version is 0 or 1 before proceeding. Retrieve the 32-bit fixed-point number. | Integer | N/A |

		usually exact	The field audio sample rate in the version 2 sound sample description(s) for the movie sound tracks. This is a 64-bit floating point double. moov.trak. mdia.minf.stbl.stsd. (sound sample description v2.audioSampleRate)	Follow the box hierarchy inside the movie box, into each sound track's mdia/stbl/stsd, and locate the sound description. Confirm the sound description version is 2 before proceeding. Retrieve the 64-bit double.	Double	N/A

	frameRate	more general	The sample count from the sample size (stsz) box in the sample table, divided by the duration (see above). moov.trak. mdia.minf.s tbl.stsz.sam pleCount, divided by duration. NOTE: As frame durations may vary within a track, this is the average frame rate. The frame rate is not	moov.mdia.stb l.stsz.samplec ount / (moov.trak.tkh d.duration / moov.mvhd.ti mescale)	Rational, float	N/A

		to be constant.			
averageBitRate	more specific or exact	Either (a.i) sum the top-level box sizes or (a.ii) find the file size from external means (e.g. file system) or (b) for each track, compute the total sample size (from the sample size table). Then divide by duration (computed above).	(a.i) sum over all top-level atoms(atom size) or (b) sum over all track samples (moov.trak.md ia.mif.stbl.stsz (sampleSize) (count also in the stsz box)		N/A

| | numTracks | exact | count (moov.trak), find types by mapping moov.trak. mdia.hdlr. Standard types are: 'vide' Video track, 'soun' Audio track, 'hint' Hint track, 'meta' Timed Metadata track. Other types may be documented in QT file format specification. | | (count, type) tuples | N/A |