

# MOST

Media Oriented Systems Transport

Multimedia and Control  
Networking Technology

MOST FBlock DVDVideoPlayer

Rev 3.0.2

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**MOSTCO CONFIDENTIAL**

See page 3 for the terms of disclosure



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## Bibliography

All documents, which are referenced by this MOST document, are listed here along with their versions.

Document		Revision
[1]	MOST Cooperation: MOST Specification	3.0
[2]	GeneralFBlock FBlock Template Specification	3.0.4

## Document History

### Changes MOST FBlock DVDVideoPlayer Rev. 3.0.1 to Rev. 3.0.2

Change Ref.	FktID	Changes
3V02_001	-	Updated Bibliography to current revisions.
3V02_002	0x131	Removed function VideoFrequency because it is now referenced from the GeneralFBlock. (WGDA 111_5)
3V02_003	0x132	Removed function VideoNorm because it is now referenced from the GeneralFBlock. (WGDA 111_5)
3V02_004	0x133	Removed function VideoSignalFormat because it is now referenced from the GeneralFBlock. (WGDA 111_5)
3V02_005	0x135	Removed function VideoFormat because it is now referenced from the GeneralFBlock. (WGDA 111_5)
3V02_006	0x200	Removed function DeckStatus because it is now referenced from the GeneralFBlock. (WGDA 111_5)
3V02_007	0x207	Added reference to function DeckStatusExt, which is defined in the GeneralFBlock. (WGDA 111_5)
3V02_008	0x251	Removed function VideoInteraction because it is now referenced from the GeneralFBlock. (WGDA 111_5)
3V02_009	0x270	Removed function PlayerRegion because it is now referenced from the GeneralFBlock. (WGDA 111_5)
3V02_010	0x430	Removed function DeckEvent because it is now referenced from the GeneralFBlock. (WGDA 111_5)
3V02_011	0x431	Removed function MediaEvent because it is now referenced from the GeneralFBlock. (WGDA 111_5)
3V02_012	0x43B	MediaCapabilities: Removed parameter ListInfoCapabilities because it was related to the bitencoded mechanism. (WGDA 109_11)
3V02_013	0x43C	BrowsingCapabilities: Removed function because it was related to the bitencoded mechanism. (WGDA 109_11)
3V02_014	0x452	Removed function Repeat because it is now referenced from the GeneralFBlock. (WGDA 111_5)
3V02_015	0x455	Removed function SlowFwSpeed because it is now referenced from the GeneralFBlock. (WGDA 111_5)
3V02_016	0x456	Removed function SlowBwSpeed because it is now referenced from the GeneralFBlock. (WGDA 111_5)
3V02_017	0x457	Removed function FastFwSpeed because it is now referenced from the GeneralFBlock. (WGDA 111_5)
3V02_018	0x458	Removed function FastBwSpeed because it is now referenced from the GeneralFBlock. (WGDA 111_5)
3V02_019	0x4B0	SelectMediaListInfo: – Removed use of bitencoded mechanism. (WGDA 109_11) – Added AlbumArtistFilter and AlbumArtistTagFilter to FilterData parameter. (WGDA 110_13_2) – Added AlbumArtist and AlbumArtistTag to MediaData parameter. (WGDA 110_13_2)
3V02_020	0x4B1	SelectMediaListFilter: – Removed use of bitencoded mechanism. (WGDA 109_11) – Added AlbumArtistFilter and AlbumArtistTagFilter to FilterData parameter. (WGDA 110_13_2) – Added AlbumArtist and AlbumArtistTag to MediaData parameter. (WGDA 110_13_2)
3V02_021	0x4B2	CurrentMediaListFilter: – Removed use of bitencoded mechanism. (WGDA 109_11) – Added AlbumArtistFilter and AlbumArtistTagFilter to FilterData parameter. (WGDA 110_13_2) – Added AlbumArtist and AlbumArtistTag to MediaData parameter. (WGDA 110_13_2)
3V02_022	0x4B3	SelectCurrentMediaListInfo: – Removed use of bitencoded mechanism. (WGDA 109_11) – Added AlbumArtist and AlbumArtistTag to MediaData parameter. (WGDA 110_13_2)

## Changes MOST FBlock DVDVideoPlayer Rev. 3.0 to Rev. 3.0.1

Change Ref.	FktID	Changes
3V01_001	-	<ul style="list-style-type: none"> <li>Added Symbolic names to all Enum values.</li> <li>Corrected inconsistent values for size and range attributes.</li> </ul>
3V01_002	0x131	VideoFrequency: Corrected description.
3V01_003	0x200	DeckStatus: Added new Enum codes for parameter DeckStatus.
3V01_004	0x201	Added function UseStatus.
3V01_005	0x251	VideoInteraction: <ul style="list-style-type: none"> <li>Added "TouchEvent" enum values to parameter "VideoInteraction".</li> <li>Removed unnecessary OPTypes.</li> </ul>
3V01_006	0x252	Added function VideoInteractionStatus.
3V01_007	0x270	PlayerRegion: PlayerRegionCode renamed to RegionCode.
3V01_008	0x282	MenuActive: Corrected BitPos; changed to 0.
3V01_009	0x283	MenuAvailable: Corrected BitPos; changed to 0. Removed Set OPType;
3V01_010	0x284	Set range of values for Pos parameter 0x0000...0x0800.
3V01_011	0x285	Skip: <ul style="list-style-type: none"> <li>Added parameter SkipDirection.</li> <li>Removed OPTypes Start, StartResult, StartAck, Processing, Result, and Error.</li> </ul>
3V01_012	0x411	Added function SelectDisk.
3V01_013	0x412	ActiveDisk: <ul style="list-style-type: none"> <li>Description modified; parameter MagazinEvent added.</li> <li>Removed OPTypes Set, SetGet, Increment, Decrement.</li> </ul>
3V01_014	0x431	MediaEvent: Added Enum value "Unsupported file".
3V01_015	0x50B	Removed function VideoParentalPwd.
3V01_016	0x431	MediaEvent, paramter "MediaEvent": Added value 0x0D "Unsupported file"
3V01_017	0x621	Removed function ResetDeviceSettings.

## Changes MOST DVDVideoPlayerFBlock 2V4-01 to MOST FBlock DVDVideoPlayer Rev. 3.0

Change Ref.	FktID	Changes
3V0_001		Added Occurrence attribute for all functions.
3V0_002	0x000	Removed function 0x000 FktIDs because it is now referenced from the GeneralFBlock.
3V0_003	0x001	Removed function 0x001 Notification because it is now referenced from the GeneralFBlock.
3V0_004	0x002	Removed function 0x002 NotificationCheck because it is now referenced from the GeneralFBlock.
3V0_005	0x100	Removed function 0x100 SourceInfo because it is now referenced from the GeneralFBlock.
3V0_006	0x101	Removed function 0x101 Allocate because it is now referenced from the GeneralFBlock.
3V0_007	0x102	Removed function 0x102 DeAllocate because it is now referenced from the GeneralFBlock.
3V0_008	0x103	Removed function 0x103 SourceActivity because it is now referenced from the GeneralFBlock.
3V0_009	0x104	Removed function 0x104 SourceName because it is now referenced from the GeneralFBlock.
3V0_010	0x105	Removed function 0x105 SourceConnect because it is now referenced from the GeneralFBlock.
3V0_011	0x106	Removed function 0x106 SourceDisConnect because it is now referenced from the GeneralFBlock.
3V0_012	0x107	Removed function 0x107 SourceRouting because it is now referenced from the GeneralFBlock.
3V0_013	0x116	Removed function 0x116 SyncDataInfo because it is now referenced from the GeneralFBlock.
3V0_014	0x130	Removed function 0x130 ScreenFormat because it is now referenced from the GeneralFBlock.
3V0_015	0x131	In function 0x131 VideoFrequency, removed optional OPType Interface.
3V0_016	0x132	In function 0x132 VideoNorm, removed optional OPType Interface.
3V0_017	0x133	In function 0x133 VideoSignalFormat, removed optional OPType Interface.
3V0_018	0x135	Added values to Enum VideoFormat in function 0x135 VideoFormat.

Change Ref.	FktID	Changes
3V0_019	0x136	Removed function 0x136 AudioOutFormat.
3V0_020	0x200	Added values to Enum DeckStatus in function 0x200 DeckStatus.
3V0_021	0x201	Removed function 0x201 TimePosition.
3V0_022	0x203	Removed function 0x203 FramePosition.
3V0_023	0x205	Removed function 0x205 TitlePosition.
3V0_024	0x206	Removed function 0x206 ChapterPosition.
3V0_025	0x251	Added OPTypes with SenderHandle to function 0x251 VideoInteraction; removed Enum values 0x0A...0x0F.
3V0_026	0x270	In function 0x270 PlayerRegion, extended range of PlayerRegionCode from 6 to 8; renamed parameter NumberOfLeftAttempts to NumberOfRemainingAttempts.
3V0_027	0x280	Added function 0x280 MediaInfo_DiskID_FreeDB.
3V0_028	0x281	Added function 0x281 MediaInfo_DiskID_Gracenote.
3V0_029	0x282	Added function 0x282 MenuActive.
3V0_030	0x283	Added function 0x283 MenuAvailable.
3V0_031	0x284	Added function 0x284 PlayPosition.
3V0_032	0x285	Added function 0x285 Skip.
3V0_033	0x286	Added function 0x286 BlockedFunctions.
3V0_034	0x287	Added function 0x287 AudioDelaySource.
3V0_035	0x410	Removed function 0x410 MagazineStatus.
3V0_036	0x411	Removed function 0x411 ActiveMagazine.
3V0_037	0x412	Added parameter SlotKey to function 0x412 ActiveDisk;
3V0_038	0x413	Added RegionCode in function 0x413 MediaInfo; extended ranges of Enums with additional values.
3V0_039	0x423	Removed function 0x423 CopyManagementInfo.
3V0_040	0x430	Added "TooMuchPowerDrawn" to DeckEvent Enum in function 0x430 DeckEvent.
3V0_041	0x431	In function 0x431 MediaEvent, added additional values to MediaEvent Enum.
3V0_042	0x436	Added function 0x436 AsyncControlSwitch.
3V0_043	0x43B	Added function 0x43B MediaCapabilities.
3V0_044	0x43C	Added function 0x43C BrowsingCapabilities.
3V0_045	0x450	Removed function 0x450 Random.
3V0_046	0x451	Removed function 0x451 Scan.
3V0_047	0x452	In function 0x452 Repeat, added additional values to RepeatState Enum.
3V0_048	0x460	Removed function 0x460 ABRepeatSetting.
3V0_049	0x461	Extend range of values for NumberOfTitles from 99 to 999 in function 0x461 AvailableTitles.
3V0_050	0x4B0	Added function 0x4B0 SelectMediaListInfo.
3V0_051	0x4B1	Added function 0x4B1 SelectMediaListFilter.
3V0_052	0x4B2	Added function 0x4B2 CurrentMediaListFilter.
3V0_053	0x4B3	Added function 0x4B3 SelectCurrentMediaListInfo.
3V0_054	0x500	Modified description of function 0x500 AudioStreamNumber.
3V0_055	0x504	Modified description of function 0x504 MenuLanguage.
3V0_056	0x501	Removed function 0x501 AvailableAudioLanguages.
3V0_057	0x503	Removed function 0x503 AvailableSubtitlesLanguages.
3V0_058	0x509	Changed function name of 0x509 VideoParentalLevel to ParentalLevelSystem.
3V0_059	0x50A	Changed function name of 0x50A TemporaryParentalLevel to ParentalLevelDVD; changed parameter type from Enum to Unsigned Byte.
3V0_060	0x50B	Corrected description of function 0x50B VideoParentalPwd.
3V0_061	0x530	Extended VideoFormat Enum in function 0x530 VideoDefaultSettings.
3V0_062	0x584	Removed Get OPTYPE from function 0x584 CountryCode.
3V0_063	0x590	Removed function 0x590 KaraokePlayer.



Change Ref.	FktID	Changes
3V0_064	0x591	Removed function 0x591 Karaoke.
3V0_065	0x592	Removed function 0x592 AvailableKaraokeStreams.
3V0_066	0x593	Removed function 0x593 KaraokeStream.
3V0_067	0x594	Removed function 0x594 KaraokeChannelMix.
3V0_068	0x595	Removed function 0x595 KaraokeModeReservation.
3V0_069	0x596	Removed function 0x596 KaraokeMode.
3V0_070	0x597	Removed function 0x597 KaraokeKeyControl.
3V0_071	0x598	Removed function 0x598 KaraokeEcho.
3V0_072	0x610	Removed function 0x610 SubpicturePalette.
3V0_073	0x613	Removed function 0x613 TimeInformation.
3V0_074	0x615	Removed function 0x615 ApplicationInformation.
3V0_075	0x617	Removed function 0x617 VideoStreamProperties.
3V0_076	0x618	Extended Enum LanguageCodeExtensionSubpix in function 0x618 SubpixStreamProperties.
3V0_077	0x620	Extended Enum ShuffleState in function 0x620 Shuffle.
3V0_078	0x621	Added function 0x621 ResetDeviceSettings.

**Changes MOST DVDVideoPlayerFBlock 2V4-00 to MOST DVDVideoPlayerFBlock 2V4-01**

Change Ref.	FktID	Changes
2.4.1-001	0x002	- Changed description of parameter FktIDList.

# 1 Introduction

This document contains the specification of an FBlock. MOST FBlocks are standardized and maintained by MOST workgroup Device Architecture (WG\_DA). In order to speed up the process of making new Function Blocks available, every FBlock will be updated individually as required.

## 2 Function Catalog

### 2.1 DVDVideoPlayer (FBlockID=0x34)

This document defines the functions of Function Block DVDVideoPlayer (0x34) for the DVD changer. The original MOST Function Blocks DVDVideoPlayer (version 2.4.1) and AuxIn (version 4.0) were used as the basis to generate this new FBlock.

In addition to the functions contained in this document, the following functions are also part of this FBlock. They exist in the GeneralFBlock template and are included here by reference:

FktID	Function name
0x000	FktIDs
0x001	Notification
0x002	NotificationCheck
0x010	Version
0x100	SourceInfo
0x101	Allocate
0x102	DeAllocate
0x103	SourceActivity
0x104	SourceName
0x107	SourceRouting
0x131	VideoFrequency
0x132	VideoNorm
0x133	VideoSignalFormat
0x135	VideoFormat
0x200	DeckStatus
0x207	DeckStatusExt
0x251	VideoInteraction
0x270	PlayerRegion
0x430	DeckEvent
0x431	MediaEvent
0x452	Repeat
0x455	SlowFwSpeed
0x456	SlowBwSpeed
0x457	FastFwSpeed
0x458	FastBwSpeed

Function Overview		
FktID	Name	Occurrence
0x201	<a href="#">UseStatus</a>	Mandatory
0x252	<a href="#">VideoInteractionStatus</a>	Mandatory
0x280	<a href="#">MediaInfo_DiskID_FreeDB</a>	Mandatory
0x281	<a href="#">MediaInfo_DiskID_Gracenote</a>	Mandatory
0x282	<a href="#">MenuActive</a>	Mandatory
0x283	<a href="#">MenuAvailable</a>	Mandatory
0x284	<a href="#">PlayPosition</a>	Mandatory
0x285	<a href="#">Skip</a>	Mandatory
0x286	<a href="#">BlockedFunctions</a>	Mandatory
0x287	<a href="#">AudioDelaySource</a>	Mandatory
0x411	<a href="#">SelectDisk</a>	Mandatory
0x412	<a href="#">ActiveDisk</a>	Mandatory
0x413	<a href="#">MediaInfo</a>	Optional
0x436	<a href="#">AsyncControlSwitch</a>	Optional
0x43B	<a href="#">MediaCapabilities</a>	Optional
0x461	<a href="#">AvailableTitles</a>	Optional
0x462	<a href="#">AvailableChapters</a>	Optional
0x463	<a href="#">AvailableAngles</a>	Optional
0x4B0	<a href="#">SelectMediaListInfo</a>	Optional
0x4B1	<a href="#">SelectMediaListFilter</a>	Optional
0x4B2	<a href="#">CurrentMediaListFilter</a>	Optional
0x4B3	<a href="#">SelectCurrentMediaListInfo</a>	Optional
0x500	<a href="#">AudioStreamNumber</a>	Optional
0x502	<a href="#">SubtitleStreamNumber</a>	Optional
0x504	<a href="#">MenuLanguage</a>	Optional
0x505	<a href="#">AvailableMenuLanguages</a>	Optional
0x509	<a href="#">ParentalLevelSystem</a>	Optional
0x50A	<a href="#">ParentalLevelDVD</a>	Optional
0x530	<a href="#">VideoDefaultSettings</a>	Optional
0x531	<a href="#">VideoAngle</a>	Optional
0x584	<a href="#">CountryCode</a>	Optional
0x614	<a href="#">AudioStreamProperties</a>	Optional
0x616	<a href="#">MultiChannel</a>	Optional
0x618	<a href="#">SubpixStreamProperties</a>	Optional
0x620	<a href="#">Shuffle</a>	Optional

## 2.1.1 UseStatus (0x201)

Occurrence: Mandatory

Description for using the DVD changer in a multi user environment. The current used magazine position is transmitted to the corresponding HMIs. (All HMIs in a (multi-user) system need to know the current magazine position.)

### 2.1.1.1 Format of Function

**Function classes:** Unclassified Property

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	UseStatus (0x201)	Get	-
		Status	<a href="#">UseStatusInfo</a> , <a href="#">MagazinPos</a>
		Error	ErrorCode, ErrorInfo

### 2.1.1.2 Parameter

#### UseStatusInfo

If the DVD-changer is the active Source of any HMI, this state must be set to 1 by the DVD-changer.

Basis data type	Bit #	Code	Description
Boolean	Bit 0	True	DVD in Use
		False	DVD not in Use

#### MagazinPos

Number of current Medium. 0 = no medium

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0		1	none

## 2.1.2 VideoInteractionStatus (0x252)

Occurrence: Mandatory

This property is used to transmit information about the current video interaction done via FktID 0x251 "VideoInteraction" to all HMI in the system.

### 2.1.2.1 Format of Function

**Function classes:** Unclassified Property

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	VideoInteraction-Status (0x252)	Get	-
		Status	<a href="#">VideoInteraction</a> , <a href="#">TouchPosX</a> , <a href="#">TouchPosY</a>
		Error	ErrorCode, ErrorInfo

### 2.1.2.2 Parameter

#### VideoInteraction

Interactive event to handle.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x0C	0x00	Title	Title
		0x01	Root	Root
		0x02	Enter	Enter
		0x03	Up	Up
		0x04	Down	Down
		0x05	Right	Right
		0x06	Left	Left
		0x07	Back	Back
		0x08	PreviousChapter	Previous Chapter
		0x09	NextChapter	Next Chapter
		0x0A	TouchEventDOWN	TouchEvent DOWN (use TouchPosX and TouchPosY parameters!)
		0x0B	TouchEventUP	TouchEvent UP (use TouchPosX and TouchPosY parameters!)
		0x0C	TouchEventHOVER	TouchEvent HOVER (use TouchPosX and TouchPosY parameters!)

#### TouchPosX

Touchscreen event X coordinate (only used if the VideoInteraction parameter is set to "TouchEvent DOWN", "TouchEvent UP", or "TouchEvent HOVER". Otherwise, set TouchPosX=0)

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	pixel

## TouchPosY

Touchscreen event Y coordinate (only used if the VideoInteraction parameter is set to "TouchEvent DOWN", "TouchEvent UP", or "TouchEvent HOVER". Otherwise, set TouchPosY=0)

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	pixel

## 2.1.3 MedialInfo\_DiskID\_FreeDB (0x280)

Occurrence: Mandatory

Transfer of identifier for audio CDs (Disk-ID) for retrieving CD info from FreeDB

### 2.1.3.1 Format of Function

**Function classes:** Array of { Number }

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	MedialInfo_DiskID _FreeDB (0x280)	Get	<a href="#">Pos</a>
		Status	<a href="#">Pos, Data</a>
		Error	ErrorCode, ErrorInfo

### 2.1.3.2 Parameter

#### Pos

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

#### Data

Basis data type	Length	Description	
Array	-	Pos	Data
		{ x=0 }	{DiskID_FreeDB[1],...,DiskID_FreeDB[NMax]}
		{ x> 0 }	{DiskID_FreeDB[x]}

#### DiskID\_FreeDB

Disk ID for FreeDB data retrieval

Use value 0 for invalid or unavailable FreeDB ID.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	none

## 2.1.4 MedialInfo\_DiskID\_Gracenote (0x281)

Occurrence: Mandatory

Transfer of identifier for audio CDs (Disk-ID) for retrieving CD info from Cddb (Gracenote).

### 2.1.4.1 Format of Function

**Function classes:** Array of { String }

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	MedialInfo_DiskID _Gracenote (0x281)	Get	<a href="#">Pos</a>
		Status	<a href="#">Pos</a> , <a href="#">Data</a>
		Error	ErrorCode, ErrorInfo

### 2.1.4.2 Parameter

#### Pos

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

#### Data

Basis data type	Length	Description	
Array	-	Pos	Data
		{ x=0 }	{DiskID_Gracenote[1],...,DiskID_Gracenote[NMax]}
		{ x> 0 }	{DiskID_Gracenote[x]}

#### DiskID\_Gracenote

Disk ID for Gracenote data retrieval.  
Use an empty string for invalid or unavailable TOC data.

Basis data type	MaxSize
String	#NULL#



## 2.1.5 MenuActive (0x282)

Occurrence: Mandatory

This property denotes if the menu of the currently played medium or file (DVD-V or video file supporting a menu) is currently active, i.e., displayed on the screen and operable.

### 2.1.5.1 Format of Function

Function classes: Switch

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	MenuActive (0x282)	Set	<a href="#">MenuActive</a>
		Get	-
		Status	<a href="#">MenuActive</a>
		Error	ErrorCode, ErrorInfo

### 2.1.5.2 Parameter

#### MenuActive

Basis data type	Bit #	Code	Description
Boolean	Bit 0	True	Menu is active
		False	Menu is not active

## 2.1.6 MenuAvailable (0x283)

Occurrence: Mandatory

This property denotes if the currently played medium (DVD-V) or video file contains a menu.

### 2.1.6.1 Format of Function

Function classes: Switch

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	MenuAvailable (0x283)	Get	-
		Status	<a href="#">MenuAvailable</a>
		Error	ErrorCode, ErrorInfo

### 2.1.6.2 Parameter

#### MenuAvailable

Basis data type	Bit #	Code	Description
Boolean	Bit 0	True	Menu available
		False	No menu available

## 2.1.7 PlayPosition (0x284)

Occurrence: Mandatory

Information about current playing time and position. For signalization of UOP (user operation prohibition), ErrorCode 0x20 (Function Specific) with ErrorInfo 0x20 (UOP) is used.

### 2.1.7.1 Format of Function

**Function classes:** Record of { Number Number Number Number Number Number Short Stream Short Stream }

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	PlayPosition (0x284)	Set	<a href="#">Pos</a> , <a href="#">Data</a>
		Get	<a href="#">Pos</a>
		SetGet	<a href="#">Pos</a> , <a href="#">Data</a>
		Status	<a href="#">Pos</a> , <a href="#">Data</a>
		Error	ErrorCode, ErrorInfo

### 2.1.7.2 Parameter

#### Pos

The parameter Pos={x,y} consists of two bytes x and y and shows which parameter shall be set or read. Since this is a unidimensional construct, the second Byte y is unused (y=0=const) and the simplified notation Pos={x} is valid. x = 0...8

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0	0x0...0x800	1	none

#### Data

Basis data type	Length	Description	
Record	-	Pos	Data
		{ x==0 }	{TitleCurNumber, TitleCurTime, TitleTotalTime, ChapterCurNumber, ChapterCurTime, ChapterTotalTime, TitleTag, SubDirectoryTag}

#### TitleCurNumber

DVD-V: Number of current title

CD/DVD-ROM: Number of current title / track in current directory by track list numbering (not tag/ID!)

CDDA: Number of current track

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

## TitleCurTime

DVD-V: Current playing time of title  
CDDA: Current playing time of track

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	ms

## TitleTotalTime

DVD-V: Total playing time of current title  
CD/DVD-ROM: Total playing time of current title (adapt continuously for VBR files!)  
CDDA: Total playing time of current track

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	ms

## ChapterCurNumber

DVD-V: Number of current chapter in title  
CD/DVD-ROM: not used  
CDDA: not used

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0		1	none

## ChapterCurTime

DVD-V: Current playing time of chapter  
CD/DVD-ROM: not used  
CDDA: not used

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	ms

## ChapterTotalTime

DVD-V: Total playing time of current chapter  
CD/DVD-ROM: not used  
CDDA: not used

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	ms

## TitleTag

Basis data type	Max. Length	Description
Short Stream	255	

## SubDirectoryTag

---

GlobalTag of the directory the currently played file is located in.

Basis data type	Max. Length	Description
Short Stream	255	

## 2.1.8 Skip (0x285)

Occurrence: Mandatory

Function for skip operations of all media supported by the DVD changer. For signalization of UOP (user operation prohibition), ErrorCode 0x20 (Function Specific) with ErrorInfo 0x20 (UOP) is used.

### 2.1.8.1 Format of Function

**Function classes:** Unclassified Method

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	Skip (0x285)	StartResultAck	<a href="#">SenderHandle</a> , <a href="#">SkipDirection</a> , <a href="#">SkipScope</a> , <a href="#">NSteps</a>
		ErrorAck	<a href="#">SenderHandle</a> , ErrorCode, ErrorInfo
		ProcessingAck	<a href="#">SenderHandle</a>
		ResultAck	<a href="#">SenderHandle</a>

### 2.1.8.2 Parameter

#### SenderHandle

Unique handle to identify the request.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

#### SkipDirection

"Beginning\_Of\_Current" is only needed if DVD changer does not decide itself about the mode of "Skip Backwards", but if Main Unit does.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x02	0x00	Next	Next
		0x01	Previous	Previous
		0x02	Beginning_Of_Current	Beginning of current

#### SkipScope

What to skip?

Title (means Title for DVD-V, Track for CD/DVD-ROM and CDDA)

Chapter (only for DVD-V)

Directory (only for CD/DVD-ROM)

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x02	0x00	Title	Title
		0x01	Chapter	Chapter
		0x02	Directory	Directory

## NSteps

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	0x0...0xFF	1	none

## 2.1.9 BlockedFunctions (0x286)

Occurrence: Mandatory

This property is used to let the Main Unit know about the currently blocked functions (UOP - user operation prohibition) during DVD-V playback. Notification must be possible. Generally, the media player sends BlockedFunctions.Status to the Main Unit on every change of the current user restrictions. The worst case bus traffic shall be limited to one message per second, though.

### 2.1.9.1 Format of Function

**Function classes:** Unclassified Property

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	BlockedFunctions (0x286)	Get	-
		Status	<a href="#">BlockedFunctions</a>
		Error	ErrorCode, ErrorInfo

### 2.1.9.2 Parameter

#### BlockedFunctions

Basis data type	Bit #	Code	Description
Unsigned Long	Bit 0	False	reserved
		True	reserved
	Bit 1	False	TIME_PLAY_SEARCH not blocked
		True	TIME_PLAY_SEARCH blocked
	Bit 2	False	PTT_PLAY_SEARCH not blocked
		True	PTT_PLAY_SEARCH blocked
	Bit 3	False	TITLE_SEARCH not blocked
		True	TITLE_SEARCH blocked
	Bit 4	False	STOP not blocked
		True	STOP blocked
	Bit 5	False	GO_UP not blocked
		True	GO_UP blocked
	Bit 6	False	TIME_PTT_SEARCH not blocked
		True	TIME_PTT_SEARCH blocked
	Bit 7	False	PREV_TOP_PG_SEARCH not blocked
		True	PREV_TOP_PG_SEARCH blocked
	Bit 8	False	NEXT_PG_SEARCH not blocked
		True	NEXT_PG_SEARCH blocked
	Bit 9	False	FORWARD_SCAN not blocked
		True	FORWARD_SCAN blocked
	Bit 10	False	BACKWARD_SCAN not blocked
		True	BACKWARD_SCAN blocked
	Bit 11	False	MENU_CALL_TITLE not blocked
		True	MENU_CALL_TITLE blocked
	Bit 12	False	MENU_CALL_ROOT not blocked
		True	MENU_CALL_ROOT blocked
	Bit 13	False	MENU_CALL_SUB_PICTURE not blocked
		True	MENU_CALL_SUB_PICTURE blocked
	Bit 14	False	MENU_CALL_SUB_PICTURE not blocked
		True	MENU_CALL_AUDIO blocked
	Bit 15	False	MENU_CALL_ANGLE not blocked
		True	MENU_CALL_ANGLE blocked
	Bit 16	False	MENU_CALL_PTT not blocked



Basis data type	Bit #	Code	Description
	Bit 17	True	MENU_CALL_PTT blocked
		False	RESUME not blocked
	Bit 18	True	RESUME blocked
		False	BUTTON not blocked
	Bit 19	True	BUTTON blocked
		False	STILL_OFF not blocked
	Bit 20	True	STILL_OFF blocked
		False	PAUSE_ON not blocked
	Bit 21	True	PAUSE_ON blocked
		False	AUDIO_CHANGE not blocked
	Bit 22	True	AUDIO_CHANGE blocked
		False	SUB_PICTURE_CHANGE not blocked
	Bit 23	True	SUB_PICTURE_CHANGE blocked
		False	ANGLE_CHANGE not blocked
	Bit 24	True	ANGLE_CHANGE blocked
		False	KARAOKE_CHANGE not blocked
	Bit 25	True	KARAOKE_CHANGE blocked
		False	VIDEO_CHANGE not blocked
	Bit 26	True	VIDEO_CHANGE blocked
		False	reserved
	Bit 27	True	reserved
		False	reserved
	Bit 28	True	reserved
		False	reserved
	Bit 29	True	reserved
		False	reserved
	Bit 30	True	reserved
		False	reserved
	Bit 31	True	reserved
		False	reserved

## 2.1.10 AudioDelaySource (0x287)

Occurrence: Mandatory

This property configures the audio buffer (audio delay line).

Note: The parameter Pos X represents the SourceNr.

### 2.1.10.1 Format of Function

**Function classes:** Array of { Record of { Boolean Number } }

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	AudioDelaySource (0x287)	Set	<a href="#">Pos, Data</a>
		Get	<a href="#">Pos</a>
		SetGet	<a href="#">Pos, Data</a>
		Status	<a href="#">Pos, Data</a>
		Error	ErrorCode, ErrorInfo

### 2.1.10.2 Parameter

#### Pos

The parameter Pos={x,y} consists of two bytes x and y and shows which parameter shall be set or read.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

#### Data

The content of Data depends on parameter Pos={x}.

Basis data type	Length	Description	
Array	-	Pos	Data
		{ x=0, y=0 }	{DelayOnOff[1], DelayTime[1],...,DelayOnOff[NMax], DelayTime[NMax]}
		{ x>0, y=0 }	{DelayOnOff[x], DelayTime[x]}

#### DelayOnOff

Enables the delay of audio data when set to true.

DefaultValue: 0x00

Basis data type	Bit #	Code	Description
Unsigned Byte	Bit 0	False	Audio Delay Off
		True	Audio Delay On
	Bit 1	False	reserved
		True	reserved
	Bit 2	False	reserved
		True	reserved
	Bit 3	False	reserved
		True	reserved

Basis data type	Bit #	Code	Description
	Bit 4	False	reserved
		True	reserved
	Bit 5	False	reserved
		True	reserved
	Bit 6	False	reserved
		True	reserved
	Bit 7	False	reserved
		True	reserved

## DelayTime

The time by which to delay the audiostream in the signal path.

DefaultValue: 0x00

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	ms

## 2.1.11 SelectDisk (0x411)

Occurrence: Mandatory

This function has to be used for the selection of a disc.

### 2.1.11.1 Format of Function

**Function classes:** Unclassified Method

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	SelectDisk (0x411)	StartResultAck	<a href="#">SenderHandle</a> , <a href="#">MagazinPos</a>
		AbortAck	<a href="#">SenderHandle</a>
		ErrorAck	<a href="#">SenderHandle</a> , ErrorCode, ErrorInfo
		ProcessingAck	<a href="#">SenderHandle</a>
		ResultAck	<a href="#">SenderHandle</a> , <a href="#">MagazinPos</a>

### 2.1.11.2 Parameter

#### SenderHandle

Unique handle to identify the request.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

#### MagazinPos

Number of current Medium. 0 = no medium

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0		1	none

## 2.1.12 ActiveDisk (0x412)

Occurrence: Mandatory

This property signals the current status of the changer's magazine. SelectDisk (0x411) is used for selection of a new disc.

### 2.1.12.1 Format of Function

**Function classes:** Unclassified Property

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	ActiveDisk (0x412)	Status	<a href="#">MagazinPos</a> , <a href="#">SlotKey</a> , <a href="#">MagazinEvent</a>
		Error	ErrorCode, ErrorInfo

### 2.1.12.2 Parameter

#### MagazinPos

Number of current Medium. 0 = no medium

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0		1	none

#### SlotKey

If active disc change was caused by manual press of a slot key on the changer, this parameter is set to 1. Otherwise it is 0.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	0x0...0x1	1	none

#### MagazinEvent

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0xFF	0x00	ErrorNotReady	Error, disc not ready
		0x01	DiscChanging	When the disc is changed, the new disc has to be set in the property. As long as the disc is still being loaded, this has to be indicated.
		0x02	DiscReady	Disc ready for play
		0xFF	ErrorNotReadable	Error, not readable

## 2.1.13 MediaInfo (0x413)

Occurrence: Optional

Dependent on the type of player (with magazine or without) there are one (NMax = 1) or more Media available. This property shows the name (MediaTitle), the type (MediaType), the file system (MediaFilesystem), the first Track (FirstTrack), the last track (LastTrack), the duration (PlayTime) and the Region Code (if available) for every medium.

Structure: Array [1..NMax] of Record of {MediaTitle, MediaType, MediaFilesystem, FirstTrack, LastTrack, PlayTime, RegionCode}

### 2.1.13.1 Format of Function

**Function classes:** Array of { Record of { String Enumeration Enumeration Number Number Number Enumeration } }

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	MediaInfo (0x413)	Set	<a href="#">Pos</a> , <a href="#">Data</a>
		Get	<a href="#">Pos</a>
		Status	<a href="#">Pos</a> , <a href="#">Data</a>
		Error	ErrorCode, ErrorInfo

### 2.1.13.2 Parameter

#### Pos

The parameter Pos={x,y} consists of two bytes x and y and shows which parameter shall be set or read. Valid range: x=0..NMax, y=0

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

#### Data

The content of Data depends on parameter Pos={x,y}.

Basis data type	Length	Description	
Array	-	Pos	Data
		{ x=0, y=0 }	{MediaTitle[1], MediaType[1], MediaFilesystem[1], FirstTrack[1], LastTrack[1], PlayTime[1], RegionCode[1],...,MediaTitle[NMax], MediaType[NMax], MediaFilesystem[NMax], FirstTrack[NMax], LastTrack[NMax], PlayTime[NMax], RegionCode[NMax]}
		{ x>0, y=0 }	{MediaTitle[x], MediaType[x], MediaFilesystem[x], FirstTrack[x], LastTrack[x], PlayTime[x], RegionCode[x]}

## MediaTitle

Name of medium

Note: If the name of the medium is not available, an empty string will be transferred.

Basis data type	MaxSize
String	#NULL#

## MediaType

Type of stored information

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00.... 0x30	0x00	NoDisc	no disc
		0x01	AudioCDDA	Audio (CDDA)
		0x02	DVDVideo	DVD (Video)
		0x03	CDROM	CD-ROM (minimum one file in known file format)
		0x04	DVDROM	DVD-ROM (minimum one file in a known file format)
		0x05	NotReadable	Not readable
		0x06	UnknownLoading	Unknown (loading)
		0x07	Unknown	Unknown
		0x08	DVDAudio	DVD-Audio
		0x09	MixedCD	Mixed CD
		0x0A	MixedDVD	Mixed DVD
		0x0B	VCD	VCD
		0x0C	DVDHybrid	DVD-Hybrid
		0x0D	SVCD	SVCD
		0x0E	CDDTS	CD-DTS
		0x0F ... 0x30		

## MediaFilesystem

Filesystem note: For MixedMode-Media the filesystem of the data tracks will be shown, because the audio tracks are always of type CDDA.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00.... 0x30	0x00	NoDisc	no disc / unknown
		0x01	CDDA	CDDA (CD Digital Audio)
		0x02	BridgeDisc	BridgeDisc (special type of CDROM/XA that contains a ISO9660-filesystem, typically e. g. a VideoCD)
		0x03	ISO9660	ISO9660 (Format of CD- / DVD-ROM)
		0x04	Joliet	Joliet (Format of CD- / DVD-ROM)
		0x05	PhotoCD	PhotoCD
		0x06	HFS	HFS
		0x07	CDi	CDi (CD Interactive, that is, with application)
		0x08	CDEExtra	CDEExtra
		0x09	CDXA	CDXA (CD Extended Architecture, standard

Basis data type	Range of values	Code	Symbolic Name	Description
				for multimedia-CDs that contain audio, video and computer data
		0x0A	UDF	UDF
		0x0B	Unknown	Unknown (invalid content - only not supported files on the disc)
		0x0C ... 0x30		Reserved

## FirstTrack

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

## LastTrack

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

## PlayTime

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	none

## RegionCode

This parameter specifies the region code (Regional Playback Control) for the DVD.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0xFF	0x00	RegionCode0	"playing in all regions" or region code not readable (e.g., not a Video DVD) or RC of DVD matches RC of system (for players not able to deliver real RC)
		0x01	RegionCode1	Bermuda, Canada, United States and U.S. territories
		0x02	RegionCode2	The Middle East, Western Europe, Central Europe, Egypt, French overseas territories, Greenland, Japan, Lesotho, South Africa and Swaziland
		0x03	RegionCode3	Southeast Asia, Hong Kong, Macau, south Korea and Taiwan
		0x04	RegionCode4	Australia, New Zealand, Central America, the Caribbean, Mexico, Oceania and South America (sans French Guyana)
		0x05	RegionCode5	The rest of Africa,



Basis data type	Range of values	Code	Symbolic Name	Description
				Former Soviet Union, the Indian subcontinent, Mongolia and North Korea
		0x06	RegionCode6	Mainland China
		0x07	RegionCode7	Reserved for future use (found in use on protected screener copies of MPAA-related DVDs, and "media-copies" of pre-releases in Asia)
		0x08	RegionCode8	International venues such as aircraft, cruise ships, etc.
		0xFF	Mismatch	RC of DVD-V does not match RC of System (for players not able to deliver real RC)

## 2.1.14 AsyncControlSwitch (0x436)

Occurrence: Optional

Due to the high amount of data that can be transferred when calling certain functions, this switch determines whether some or all OPTypes of certain functions use the Packet Data Channel instead of the Control Channel. See the function definitions to determine which functions and OPTypes are affected by this switch.

The hardware need not support the Packet Data Channel; in this case, AsyncControlSwitch will respond with an error. The default on every startup, Configuration.Status(NotOK), etc. must be "False". Before using the Packet Data Channel, the Controller must Set or SetGet this property to "True" and must receive a Status of "True" for confirmation. The Controller may Set or SetGet this property to "True" only if it supports the Packet Data Channel itself. If several Controllers access the same FBlock, it is advised to set a notification for this property and have each Controller send AsyncControlSwitch. Set either with "True" or "False" depending on the abilities of the Controller. This will ensure that switching to the Packet Data Channel is only done when all Controllers (and the FBlock) support packet data handling.

Notification must be possible.

### 2.1.14.1 Format of Function

Function classes: Switch

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	AsyncControl-Switch (0x436)	Set	<a href="#">Async</a>
		Get	-
		SetGet	<a href="#">Async</a>
		Status	<a href="#">Async</a>
		Error	ErrorCode, ErrorInfo

### 2.1.14.2 Parameter

#### Async

Determines whether requests and responses (status and error messages) for AudioListInfo and CurrentAudioListInfo are sent through the Packet Data Channel instead of the Control Channel.

Basis data type	Bit #	Code	Description
Boolean	Bit 0	True	Packet Data Channel
		False	Control Channel

## 2.1.15 MediaCapabilities (0x43B)

Occurrence: Optional

Provides information about the media capabilities of the FBlock. The focus is on what the FBlock offers, **not** what the connected devices are capable of! Typically, the information returned by MediaCapabilities is derived from the features of the connected devices. Note that there are several ways the connected devices can be mapped to the FBlock representation, any of the following examples is possible, assuming that the FBlock offers both directory/file browsing and artist/album/title browsing and a mass storage device and an iPod are connected.

- Under directory/file browsing, only the mass storage device contents can be seen, under artist/album/title browsing only the iPod contents can be seen.
- Under directory/file browsing, in addition to the mass storage contents, the iPod can be seen using virtual directories (built from artist and album names).
- Under artist/album/title browsing, in addition to the iPod, the contents of the mass storage device can be seen after the mass storage device has been scanned.

The MediaCapabilities indicate what general types of media content the FBlock offers.

Notification must be possible

### 2.1.15.1 Format of Function

**Function classes:** Unclassified Property

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	MediaCapabilities (0x43B)	Get	-
		Status	<a href="#">MediaCapabilitiesStatus</a> , <a href="#">MediaCapabilities</a>
		Error	ErrorCode, ErrorInfo

### 2.1.15.2 Parameter

#### MediaCapabilitiesStatus

The status of the FBlock. This is summarized from the stati of the devices which are connected. For details about which connected device does what check the Property AuxDeviceInfo.

Basis data type	Bit #	Code	Description
Unsigned Byte	Bit 0	False	No initialization is currently active
		True	At least one device is initializing
	Bit 1	False	No scanning is currently active
		True	At least one device is scanning
	Bit 2	False	No scan is currently pending
		True	At least one device has a scan pending
	Bit 3	False	No device is currently ready to play
		True	At least one device is ready to play
	Bit 4	False	No device is currently disconnecting
		True	At least one device is disconnecting
	Bit 5	False	No device is currently erroneous
		True	At least one device has a connection error

## MediaCapabilities

The high level media capabilities of the FBlock

Basis data type	Bit #	Code	Description
Unsigned Word	Bit 0	False	leave empty
		True	Audio Player Control
	Bit 1	False	leave empty
		True	Audio Metadata Display
	Bit 2	False	leave empty
		True	Audio Metadata Browsing
	Bit 3	False	leave empty
		True	Video Player Control
	Bit 4	False	leave empty
		True	Video Metadata Display
	Bit 5	False	leave empty
		True	Video Metadata Browsing
	Bit 6	False	leave empty
		True	Picture
	Bit 7	False	leave empty
		True	Correspondence
	Bit 8	False	leave empty
		True	reserved
	Bit 9	False	leave empty
		True	reserved
	Bit 10	False	leave empty
		True	reserved
	Bit 11	False	leave empty
		True	reserved
	Bit 12	False	leave empty
		True	reserved
	Bit 13	False	leave empty
		True	reserved
	Bit 14	False	leave empty
		True	reserved
	Bit 15	False	leave empty
		True	reserved

## 2.1.16 AvailableTitles (0x461)

Occurrence: Optional

Number of available Titles.

### 2.1.16.1 Format of Function

**Function classes:** Unclassified Property

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	AvailableTitles (0x461)	Get	<a href="#">NumberOfTitles</a>
		Status	<a href="#">NumberOfTitles</a>
		Error	ErrorCode, ErrorInfo

### 2.1.16.2 Parameter

#### NumberOfTitles

No Description

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0	0...999	1	none

## 2.1.17 AvailableChapters (0x462)

Occurrence: Optional

Number of available chapters.

### 2.1.17.1 Format of Function

**Function classes:** Unclassified Property

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	AvailableChapters (0x462)	Get	<a href="#">NumberOfChapters</a>
		Status	<a href="#">NumberOfChapters</a>
		Error	ErrorCode, ErrorInfo

### 2.1.17.2 Parameter

#### NumberOfChapters

No Description

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0	0...999	1	none

## 2.1.18 AvailableAngles (0x463)

Occurrence: Optional

Number of available angles of current title.

### 2.1.18.1 Format of Function

**Function classes:** Unclassified Property

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	AvailableAngles (0x463)	Get	<a href="#">NumberOfAngles</a>
		Status	<a href="#">NumberOfAngles</a>
		Error	ErrorCode, ErrorInfo

### 2.1.18.2 Parameter

#### NumberOfAngles

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	0...99	1	none

## 2.1.19 SelectMediaListInfo (0x4B0)

Occurrence: Optional

Get specific information from a (possibly virtual) media information database on the FBlock or on the device represented by the FBlock. The returned list contains a thesaurus of specific information of all media available. This function allows complete querying of the media library with just one command.  
Remarks:

- The record used for the MediaData parameter can be considered as a (non-optimized, redundant) table in a relational database
- If the filter is set and produces duplicate entries, the duplicates must be removed before transfer
- Record elements which are not requested should be empty (string: empty string, numbers: zero)
- It is advised to request PlayList with caution. Requesting all playLists with all Songs can return a huge number of result records: If a Song is in more than one PlayList, it will be returned once for each PlayList it is in (RIGHT OUTER JOIN operation between playlists and songs).
- If NumberResults is a large value and the FBlock does not have enough memory available to process the request, use ErrorCode 0x20, ErrorInfo 0x02 (List overflow) to indicate that the FBlock is not able to handle this request.
- If an optional filter method is used by the controller but the FBlock does not support this type of filter, use ErrorCode 0x07 (Parameter not available).

Application remarks:

The FBlock allows a maximum directory pathname length of 255 characters. The controller must be aware of directory browsing method since filling of the appropriate entries like DirectoryNameFilter must be accomplished. Long playlist names must be supported adequately. A directory history can be implemented in the controller (including upDirectory or previousDirectory) by parsing the directoryname.

All implementations: Playlists found in the directory structure (e.g., m3u) should be presented as additional playlists. The identification (ie. playlist name) can be either the playlist name, the concatenation of playlist name and directory path, or some other suitable name generation mechanism.

The usage of the transport channel (Control Channel or Packet Data Channel) is determined by property AsyncControlSwitch. If set to True then all OPTypes will use the Packet Data Channel channel, if False then the Control Channel will be used.

### 2.1.19.1 Format of Function

**Function classes:** Unclassified Method

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	SelectMediaList Info (0x4B0)	StartResultAck	<a href="#">SenderHandle</a> , <a href="#">Selector</a> , <a href="#">RequestData</a>
		AbortAck	<a href="#">SenderHandle</a>
		ErrorAck	<a href="#">SenderHandle</a> , ErrorCode, ErrorInfo
		ProcessingAck	<a href="#">SenderHandle</a>
		ResultAck	<a href="#">SenderHandle</a> , <a href="#">Selector</a> , <a href="#">ResponseData</a>



## 2.1.19.2 Parameter

### SenderHandle

Unique handle to identify the request.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

### Selector

Selects the structure to use for the ResponseData and RequestData.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x02	0x00	Start	Start
		0x01	StartTitleTag	StartTitleTag
		0x02	StartGlobalTag	StartGlobalTag

### RequestData

A container for the request data.

Basis data type	Length	Condition	Description
Stream		Selector = 0x00	Content: <a href="#">Start</a> , <a href="#">NumberResults</a> , <a href="#">ResultColumns</a> , <a href="#">SortOrder1</a> , <a href="#">SortOrder2</a> , <a href="#">SortOrder3</a> , <a href="#">FilterColumns</a> , <a href="#">FilterData</a>
		Selector = 0x01	Content: <a href="#">StartTitleTag</a> , <a href="#">NumberResults</a> , <a href="#">ResultColumns</a> , <a href="#">SortOrder1</a> , <a href="#">SortOrder2</a> , <a href="#">SortOrder3</a> , <a href="#">FilterColumns</a> , <a href="#">FilterData</a>
		Selector = 0x02	Content: <a href="#">StartGlobalTag</a> , <a href="#">NumberResults</a> , <a href="#">ResultColumns</a> , <a href="#">SortOrder1</a> , <a href="#">SortOrder2</a> , <a href="#">SortOrder3</a> , <a href="#">FilterColumns</a> , <a href="#">FilterData</a>

### Start

Start (together with NumberResults) indicates which part of the data is to be returned. The first record/line has a Start value of 1. A Start value greater than TotalNumberResults will result in an empty list.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	none

## NumberResults

NumberResults indicates how many data entries are to be sent. Positive values are advancing forward in the result list, whereas negative values are stepping backwards in the list. This criteria is applied last after applying SortOrder argument.

Sending the special value of zero will return no entries, but will return a ResultAck message containing the TotalNumberResults to be expected for this request.

The number returned in NumberResults may be lower than the requested number, only if there are either fewer results than requested or if the implementation cannot handle the number of requested results.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	none

## ResultColumns

ResultColumns indicates which record elements are of interest to the requester. The value has to be interpreted as an Enum, where each code has a system integrator specific meaning. Therefore 256 different combinations of record elements can be selected.

**Note:** Value 0xFF is predefined and matches the entire set of possible stream parameters.

The system integrator has to define if a specific Enum code selects "Speech mode" or not.

By selecting Speech mode all String fields of MediaData are interpreted as phonetic data instead of the normal string data. Speech mode is optional and the FBlock should return an ErrorCode of 0x07 if speech mode has been requested but has not been implemented in the FBlock.

Related record elements must not be selected separately from each other. Example: When record element CoverArt shall be transferred, record element PictureData must also be selected in order to receive the CoverArt for a certain title.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0		1	none

## SortOrder1

SortOrder1, SortOrder2 and SortOrder3 indicate which record element of MediaData is to be used for ordering the result. The parameters are applied consecutively from 1 to 3 with the rule that a later SortOrder only sorts entries that are equal after the previous application of SortOrder criteria. E.g., first sort by genre and for those titles with equal genres then sort by artist.

Positive numbers for SortOrder[1,2,3] indicate ascending order, negative numbers indicate descending order. The number used is equal to the position of the stream parameter in the stream case that is selected by the current value of ResultColumns. The first stream parameter corresponds to a value of 0x01.

A value of 0x00 will apply default sort order of the device.

Basis data type	Exp.	Range of values	Step	Unit
Signed Word	0		1	none

## SortOrder2

Basis data type	Exp.	Range of values	Step	Unit
Signed Word	0		1	none

## SortOrder3

Basis data type	Exp.	Range of values	Step	Unit
Signed Word	0		1	none

## FilterColumns

FilterColumns indicates which elements are of interest to the requester. Elements which are not relevant for filtering are not part of the FilterData data stream.

**Note:** Value 0xFF is predefined and matches the entire set of possible stream parameters.

Correspondence Filters have a special meaning and to function correctly typically require certain FilterData elements to be present. Example: When the Correspondence Filter CoverArt is set, PictureData is typically requested while a specific audio title (e.g., identified by a TitleTag) is sent in the filter.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0		1	none

## FilterData

FilterData is used for setting a filter for record elements to match certain criteria.

Basis data type	Length	Condition	Description
Stream		FilterColumns = 0xFF	Content: <a href="#">GlobalTagFilter</a> , <a href="#">TitleFilter</a> , <a href="#">TitleTagFilter</a> , <a href="#">YearFilter</a> , <a href="#">SecuredFilter</a> , <a href="#">TimesPlayedFilter</a> , <a href="#">RatingFilter</a> , <a href="#">CreationTimeFilter</a> , <a href="#">CommentFilter</a> , <a href="#">FilenameFilter</a> , <a href="#">FilenameTagFilter</a> , <a href="#">DirectoryFilter</a> , <a href="#">DirectoryTagFilter</a> , <a href="#">PlaylistNameFilter</a> , <a href="#">PlaylistNameTagFilter</a> , <a href="#">FileSizeFilter</a> , <a href="#">FileStatusFilter</a> , <a href="#">ArtistFilter</a> , <a href="#">ArtistTagFilter</a> , <a href="#">AlbumFilter</a> , <a href="#">AlbumTagFilter</a> , <a href="#">AlbumArtistFilter</a> , <a href="#">AlbumArtistTagFilter</a> , <a href="#">AudioGenreFilter</a> , <a href="#">AudioGenreTagFilter</a> , <a href="#">ComposerFilter</a> , <a href="#">ComposerTagFilter</a> , <a href="#">GroupingFilter</a> , <a href="#">GroupingTagFilter</a> , <a href="#">OpusFilter</a> , <a href="#">OpusTagFilter</a> , <a href="#">SoloistFilter</a> , <a href="#">SoloistTagFilter</a> , <a href="#">ConductorFilter</a> , <a href="#">ConductorTagFilter</a> , <a href="#">EnsembleFilter</a> , <a href="#">EnsembleTagFilter</a> , <a href="#">TrackNumberFilter</a> , <a href="#">TracksInAlbumFilter</a> , <a href="#">PlayTimeFilter</a> , <a href="#">AudioTypeFilter</a> , <a href="#">FileFormatAudioFilter</a> , <a href="#">BitrateAudioFilter</a> , <a href="#">SamplerateAudioFilter</a> , <a href="#">MaxChartPositionFilter</a> , <a href="#">VideoGenreFilter</a> , <a href="#">VideoGenreTagFilter</a> , <a href="#">DirectorFilter</a> , <a href="#">DirectorTagFilter</a> , <a href="#">WriterFilter</a> , <a href="#">WriterTagFilter</a> , <a href="#">ProducerFilter</a> , <a href="#">ProducerTagFilter</a> , <a href="#">DistributorFilter</a> , <a href="#">DistributorTagFilter</a> , <a href="#">CountryFilter</a> , <a href="#">AudioLanguagesFilter</a> , <a href="#">SubtitleLanguagesFilter</a> , <a href="#">VideoTypeFilter</a> , <a href="#">FileFormatVideoContainerFilter</a> , <a href="#">FileFormatVideoCodecFilter</a> , <a href="#">ResolutionWidthFilter</a> , <a href="#">ResolutionHeightFilter</a> , <a href="#">BitrateVideoFilter</a> , <a href="#">FramerateVideoFilter</a> , <a href="#">VideoDescriptionFilter</a> , <a href="#">VideoDescriptionTagFilter</a> , <a href="#">PictureDescriptionFilter</a> ,

Basis data type	Length	Condition	Description
			<a href="#">PictureDescriptionTagFilter</a> , <a href="#">RollNumberFilter</a> , <a href="#">RollNameFilter</a> , <a href="#">PictureTypeFilter</a> , <a href="#">PictureTimeFilter</a> , <a href="#">BoolOp</a>

## GlobalTagFilter

A global tag which individually identifies each entry of each response. It is possible to create this tag by using a tag type identifier and then appending the type specific tag, e.g., "01" + TitleTag.

Basis data type	Max. Length	Description
Short Stream	255	

## TitleFilter

Title of this entry

Basis data type	MaxSize
String	#NULL#

## TitleTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## YearFilter

Year of publication of this entry.

Basis data type	MaxSize
String	#NULL#

## SecuredFilter

Describes whether the entry is DRM protected and which system is used.

Basis data type	Bit #	Code	Description
BitField Size: 2	Bit 0	False	-
		True	Not Secured
	Bit 1	False	-
		True	Unknown DRM
	Bit 2	False	-
		True	WMDRM9
	Bit 3	False	-
		True	WMDRM10
	Bit 4	False	-
		True	WMDRM11
	Bit 5	False	-
		True	Fairplay
	Bit 6	False	-
		True	Audible

## TimesPlayedFilter

Number of times an entry was played.

Basis data type	MaxSize
String	#NULL#

## RatingFilter

Rating of this entry. Higher value is better.

Basis data type	MaxSize
String	#NULL#

## CreationTimeFilter

Date this entry was created (possibly the file creation time). Time is UTC in ms since 1/1/1970.

Basis data type	MaxSize
String	#NULL#

## CommentFilter

Comment for this entry.

Basis data type	MaxSize
String	#NULL#

## FilenameFilter

Name of the file, without directory information.

Basis data type	MaxSize
String	#NULL#

## FilenameTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## DirectoryFilter

Directory as a stream.

Basis data type	Length	Condition	Description
Stream		-	Content: <a href="#">Options</a> , <a href="#">SessionID</a> , <a href="#">NumberDirectories</a> , <a href="#">SubDirectory</a>

## Options

The Options parameter indicates how to interpret the directory information. If "Exclude Subdirectories" is set, only the directory itself and possibly the files directly within the directory are considered. If "Exclude Directory itself" is set, then the files within the given directory are ignored. "Relative Directory Access" is used to inform that this directory can be located anywhere in the directory tree and must not start at the root. If SessionID is also given, then the relative directory is considered relative to the directory that was previously defined within the same session. An absolute directory in combination with a SessionID will set the directory within the session to the specified directory. The option indicating whether the first directory string is a Drive can, e.g., be used to beautify the display: with a drive first, typically there is no prepended slash, e.g., C:/subdir/ compared to /rootdir/subdir/. Also see the description for AuxDeviceInfo->DeviceName for a preferred way to name drives.

Basis data type	Bit #	Code	Description
Unsigned Byte	Bit 0	False	Absolute Directory Access
		True	Relative Directory Access
	Bit 1	False	Include Subdirectories
		True	Exclude Subdirectories
	Bit 2	False	Include Directory itself
		True	Exclude Directory itself
	Bit 3	False	The first directory string is a regular subdirectory
		True	The first directory string is a drive, e.g., C:
	Bit 4	False	Return an error, typically 0x20 0x04.
		True	Ignore (i.e. assume an empty directory) problem if the given directory does not exist.

## SessionID

A Session ID within which the directory can be referenced relative to the previous access.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	none

## NumberDirectories

The number of directory entries following this entry.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	0x0...0xFF	1	none

## SubDirectory

SubDirectory is repeated n times as given in NumberDirectories. This makes the total number of entries within the stream n+3 (Options plus SessionID plus NumberDirectories (=n) plus n SubDirectories).

Basis data type	MaxSize
String	255

## DirectoryTagFilter

Unique identifier.

Basis data type	Length	Min. Length	Condition	Description
Stream	260	5	-	Content: <a href="#">Options</a> , <a href="#">SessionID</a> , <a href="#">NumberDirectories</a> , <a href="#">SubDirectoryTag</a>

## SubDirectoryTag

SubDirectoryTag is repeated n times as given in NumberDirectories. This makes the total number of entries within the stream n+3 (Options plus SessionID plus NumberDirectories (=n) plus n SubDirectoryTags).

Basis data type	Max. Length	Description
Short Stream	255	

## PlaylistNameFilter

Name of a Playlist

Basis data type	MaxSize
String	#NULL#

## PlaylistNameTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## FileSizeFilter

Size of the media title as stored on disk. Unit is bytes.

Basis data type	MaxSize
String	#NULL#

## FileStatusFilter

The status of the file

Basis data type	Bit #	Code	Description
BitField Size: 1	Bit 0	False	-
		True	Unknown
	Bit 1	False	-
		True	OK
	Bit 2	False	-
		True	Corrupted
	Bit 3	False	-
		True	Dead Link

## ArtistFilter

Name of the Artist

Basis data type	MaxSize
String	#NULL#

## ArtistTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## AlbumFilter

Name of the Album

Basis data type	MaxSize
String	#NULL#

## AlbumTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## AlbumArtistFilter

Name of the album's artist. It is used, for example, in compilation albums as "Various Artists" or cooperation albums containing tracks of a main artist "featuring" or "with" other artists. The AlbumArtist value then contains the main artist.

Basis data type	MaxSize
String	#NULL#

## AlbumArtistTagFilter

Unique identifier.

Basis data type	MaxSize
String	#NULL#

## AudioGenreFilter

Genre of the audio piece

Basis data type	MaxSize
String	#NULL#



### AudioGenreTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

### ComposerFilter

Composer name of the audio piece

Basis data type	MaxSize
String	#NULL#

### ComposerTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

### GroupingFilter

Basis data type	MaxSize
String	#NULL#

### GroupingTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

### OpusFilter

Opus this audio entry belongs to

Basis data type	MaxSize
String	#NULL#

### OpusTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## SoloistFilter

Soloist(s) who have performed this title

Basis data type	MaxSize
String	#NULL#

## SoloistTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## ConductorFilter

Conductor who has conducted this title

Basis data type	MaxSize
String	#NULL#

## ConductorTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## EnsembleFilter

Ensemble which has played this title

Basis data type	MaxSize
String	#NULL#

## EnsembleTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## TrackNumberFilter

Track number of the title, e.g., on a CD

Basis data type	MaxSize
String	#NULL#

## TracksInAlbumFilter

Number of tracks on the corresponding CD, related to the TrackNumber.

Basis data type	MaxSize
String	#NULL#

## PlayTimeFilter

Basis data type	MaxSize
String	#NULL#

## AudioTypeFilter

Type of the audio.

Basis data type	Bit #	Code	Description
BitField Size: 2	Bit 0	False	-
		True	Unknown
	Bit 1	False	-
		True	Reserved
	Bit 2	False	-
		True	Normal Audio
	Bit 3	False	-
		True	Audiobook
	Bit 4	False	-
		True	Podcast

## FileFormatAudioFilter

Basis data type	Bit #	Code	Description
BitField Size: 8	Bit 0	False	-
		True	reserved
	Bit 1	False	-
		True	Compressed Audio
	Bit 2	False	-
		True	MP3
	Bit 3	False	-
		True	WMA
	Bit 4	False	-
		True	AAC
	Bit 5	False	-
		True	OGGVorbis
	Bit 6	False	-
		True	ATRAC
	Bit 7	False	-
		True	MP3Pro
	Bit 8	False	-
		True	WAV
	Bit 9	False	-
		True	reserved
	Bit 10	False	-
		True	FLAC
	Bit 11	False	-
		True	Reserved
	Bit 12	False	-
		True	Reserved
	Bit 13	False	-

Basis data type	Bit #	Code	Description
	Bit 14	True	Reserved
		False	-
	Bit 15	True	Reserved
		False	-
	Bit 16	True	Reserved
		False	-
	Bit 17	True	AMR
		False	-
	Bit 18	True	CELP
		False	-
	Bit 19	True	GSM
		False	-
	Bit 20	True	iLBC
		False	-
	Bit 21	True	MELP
		False	-
	Bit 22	True	Speex
		False	-
		True	ITU G.711-G.729

### BitrateAudioFilter

A positive value indicates a constant bitrate (CBR) as given. A negative value indicates a variable bitrate (VBR), averaging at the given bitrate.

Basis data type	MaxSize
String	#NULL#

### SamplerateAudioFilter

Basis data type	MaxSize
String	#NULL#

### MaxChartPositionFilter

Basis data type	MaxSize
String	#NULL#

### VideoGenreFilter

Genre of the video title

Basis data type	MaxSize
String	#NULL#

### VideoGenreTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## DirectorFilter

Name of the director

Basis data type	MaxSize
String	#NULL#

## DirectorTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## WriterFilter

Name of the Writer/Author

Basis data type	MaxSize
String	#NULL#

## WriterTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## ProducerFilter

Name of the producer

Basis data type	MaxSize
String	#NULL#

## ProducerTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## DistributorFilter

Name of the distributor

Basis data type	MaxSize
String	#NULL#

## DistributorTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## CountryFilter

Country in ISO-639-1 coding (two letters). Can contain more than one code, separated by Semicolon.

Basis data type	MaxSize
String	#NULL#

## AudioLanguagesFilter

List of audio languages in ISO-639-1 notation including the sound format for each language. These are two characters to determine the language; one character to determine the number of normal audio channels (front), one character to determine the number of normal audio channels (side/rear/surround) and one character to determine the number of LFE channels. Each entry is exactly 5 characters long. Entries are separated with semicolon. Example: "en200;en321;de200" means that the following audio streams are available: English, stereo (2.0); English, surround (5.1); German, stereo (2.0). "en000" can be used if the format is not relevant.

Basis data type	MaxSize
String	#NULL#

## SubtitleLanguagesFilter

List of subtitle languages in ISO-639-1 notation. Entries are separated with semicolon.

Basis data type	MaxSize
String	#NULL#

## VideoTypeFilter

Type of the video.

Basis data type	Bit #	Code	Description
BitField Size: 2	Bit 0	False	-
		True	Unknown
	Bit 1	False	-
		True	Reserved
	Bit 2	False	-
		True	Movie
	Bit 3	False	-
		True	TV Show
	Bit 4	False	-
		True	Video Podcast
	Bit 5	False	-
		True	Music Video

## FileFormatVideoContainerFilter

Container Format of the Video File.

Basis data type	Bit #	Code	Description
BitField Size: 4	Bit 0	False	-
		True	Unknown
	Bit 1	False	-
		True	MPEG-1
	Bit 2	False	-
		True	MPEG-2
	Bit 3	False	-
		True	MPEG-4
	Bit 4	False	-
		True	3GP
	Bit 5	False	-
		True	ASF
	Bit 6	False	-
		True	Reserved
	Bit 7	False	-
		True	Matroska
	Bit 8	False	-
		True	Quicktime
	Bit 9	False	-
		True	MXF
	Bit 10	False	-
		True	Ogg
	Bit 11	False	-
		True	Realmedia
	Bit 12	False	-
		True	AVI

## FileFormatVideoCodecFilter

Codec used within the video file.

Basis data type	Bit #	Code	Description
BitField Size: 4	Bit 0	False	-
		True	Unknown
	Bit 1	False	-
		True	MPEG-1
	Bit 2	False	-
		True	MPEG-2
	Bit 3	False	-
		True	MPEG-4
	Bit 4	False	-
		True	H.264
	Bit 5	False	-
		True	DV
	Bit 6	False	-
		True	Real
	Bit 7	False	-
		True	wmv
	Bit 8	False	-
		True	ogg
	Bit 9	False	-
		True	cinepak
	Bit 10	False	-
		True	indeo
	Bit 11	False	-

Basis data type	Bit #	Code	Description
	Bit 12	True	HuffYUV
		False	-
		True	DivX

### ResolutionWidthFilter

Width of the video's resolution

Basis data type	MaxSize
String	#NULL#

### ResolutionHeightFilter

Height of the video's resolution

Basis data type	MaxSize
String	#NULL#

### BitrateVideoFilter

A positive value indicates a constant bitrate (CBR) as given. A negative value indicates a variable bitrate (VBR), averaging at the given bitrate.

Basis data type	MaxSize
String	#NULL#

### FramerateVideoFilter

Basis data type	MaxSize
String	#NULL#

### VideoDescriptionFilter

Free text

Basis data type	MaxSize
String	#NULL#

### VideoDescriptionTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

### PictureDescriptionFilter

Free text

Basis data type	MaxSize
String	#NULL#



## PictureDescriptionTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## RollNumberFilter

If photos are organized into rolls, this can be used to identify them by a number.

Basis data type	MaxSize
String	#NULL#

## RollNameFilter

If photos are organized into rolls, this can be used to identify them by name.

Basis data type	MaxSize
String	#NULL#

## PictureTypeFilter

Type of the picture/photo

Basis data type	Bit #	Code	Description
BitField Size: 2	Bit 0	False	-
		True	Unknown
	Bit 1	False	-
		True	Reserved
	Bit 2	False	-
		True	Photo
	Bit 3	False	-
		True	Drawing
	Bit 4	False	-
		True	Coverart

## PictureTimeFilter

Time the photo was taken. Time is UTC in ms since 1/1/1970.

Basis data type	MaxSize
String	#NULL#

## BoolOp

BoolOp is a meta-tag which indicates how to combine the array elements when filtering. With regards to evaluation, AND takes precedence over OR.

Basis data type	Bit #	Code	Description
Boolean	Bit 0	True	AND
		False	OR

## StartTitleTag

StartTitleTag (together with Offset and NumberResults) indicates which part of the data is to be returned. A Start Tag that is not part of the currently active filter will result in an error.

Basis data type	Max. Length	Description
Short Stream	255	

## StartGlobalTag

StartGlobalTag (together with Offset and NumberResults) indicates which part of the data is to be returned. A Start Tag that is not part of the currently active filter will result in an error.

Basis data type	Max. Length	Description
Short Stream	255	

## ResponseData

A container for the response data.

Basis data type	Length	Condition	Description
Stream		Selector = 0x00	Content: <a href="#">Start</a> , <a href="#">NumberResults</a> , <a href="#">ResultColumns</a> , <a href="#">SortOrder1</a> , <a href="#">SortOrder2</a> , <a href="#">SortOrder3</a> , <a href="#">TotalNumberResults</a> , <a href="#">MediaData</a>
		Selector = 0x01	Content: <a href="#">StartTitleTag</a> , <a href="#">NumberResults</a> , <a href="#">ResultColumns</a> , <a href="#">SortOrder1</a> , <a href="#">SortOrder2</a> , <a href="#">SortOrder3</a> , <a href="#">TotalNumberResults</a> , <a href="#">MediaData</a>
		Selector = 0x02	Content: <a href="#">StartGlobalTag</a> , <a href="#">NumberResults</a> , <a href="#">ResultColumns</a> , <a href="#">SortOrder1</a> , <a href="#">SortOrder2</a> , <a href="#">SortOrder3</a> , <a href="#">TotalNumberResults</a> , <a href="#">MediaData</a>

## TotalNumberResults

The total number of results available which match the selected filter criteria. If the number cannot be determined at the time of the request, use 0xFFFFFFFF.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	none

## MediaData

Due to the multitude of possible stream cases, there is no explicit list of these stream cases. Instead, only the most generic use case listing all possible parameters once within the stream case is shown. Depending on the Value of the Parameter 'ResultColumns', all data field which are **not** requested are left out.

The given parameter sequence order must be kept even when elements are left out.

The reduced parameter set is repeated 'NumberResults' times to accommodate all requested result data.

Basis data type	Length	Condition	Description
Stream		ResultColumns = 0xFF	Content: <a href="#">GlobalTag</a> , <a href="#">Title</a> , <a href="#">TitleTag</a> , <a href="#">Year</a> , <a href="#">Secured</a> , <a href="#">TimesPlayed</a> , <a href="#">Rating</a> , <a href="#">CreationTime</a> , <a href="#">Comment</a> , <a href="#">Filename</a> ,

Basis data type	Length	Condition	Description
			<a href="#">FilenameTag</a> , <a href="#">Directory</a> , <a href="#">DirectoryTag</a> , <a href="#">PlaylistName</a> , <a href="#">PlaylistNameTag</a> , <a href="#">FileSize</a> , <a href="#">FileStatus</a> , <a href="#">Artist</a> , <a href="#">ArtistTag</a> , <a href="#">Album</a> , <a href="#">AlbumTag</a> , <a href="#">AlbumArtist</a> , <a href="#">AlbumArtistTag</a> , <a href="#">AudioGenre</a> , <a href="#">AudioGenreTag</a> , <a href="#">Composer</a> , <a href="#">ComposerTag</a> , <a href="#">Grouping</a> , <a href="#">GroupingTag</a> , <a href="#">Opus</a> , <a href="#">OpusTag</a> , <a href="#">Soloist</a> , <a href="#">SoloistTag</a> , <a href="#">Conductor</a> , <a href="#">ConductorTag</a> , <a href="#">Ensemble</a> , <a href="#">EnsembleTag</a> , <a href="#">TrackNumber</a> , <a href="#">TracksInAlbum</a> , <a href="#">PlayTime</a> , <a href="#">AudioType</a> , <a href="#">FileFormatAudio</a> , <a href="#">BitrateAudio</a> , <a href="#">SamplerateAudio</a> , <a href="#">MaxChartPosition</a> , <a href="#">AudioData</a> , <a href="#">VideoGenre</a> , <a href="#">VideoGenreTag</a> , <a href="#">Director</a> , <a href="#">DirectorTag</a> , <a href="#">Writer</a> , <a href="#">WriterTag</a> , <a href="#">Producer</a> , <a href="#">ProducerTag</a> , <a href="#">Distributor</a> , <a href="#">DistributorTag</a> , <a href="#">Country</a> , <a href="#">AudioLanguages</a> , <a href="#">SubtitleLanguages</a> , <a href="#">VideoType</a> , <a href="#">FileFormatVideoContainer</a> , <a href="#">FileFormatVideoCodec</a> , <a href="#">ResolutionWidth</a> , <a href="#">ResolutionHeight</a> , <a href="#">BitrateVideo</a> , <a href="#">FramerateVideo</a> , <a href="#">VideoDescription</a> , <a href="#">VideoDescriptionTag</a> , <a href="#">VideoData</a> , <a href="#">PictureDescription</a> , <a href="#">PictureDescriptionTag</a> , <a href="#">RollNumber</a> , <a href="#">RollName</a> , <a href="#">PictureType</a> , <a href="#">PictureTime</a> , <a href="#">PictureData</a>

## GlobalTag

A global tag which individually identifies each entry of each response. It is possible to create this tag by using a tag type identifier and then appending the type specific tag, e.g., "01" + TitleTag.

Basis data type	Max. Length	Description
Short Stream	255	

## Title

Title of this entry

Basis data type	MaxSize
String	255

## TitleTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Year

Year of publication of this entry.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0	0x0...0xFFFF	1	none

## Secured

Describes whether the entry is DRM protected and which system is used.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x06	0x00	NotSecured	Not Secured
		0x01	UnknownDRM	Unknown DRM
		0x02	WMDRM9	WMDRM9
		0x03	WMRM10	WMRM10
		0x04	WMRM11	WMRM11
		0x05	Fairplay	Fairplay
		0x06	Audible	Audible

## TimesPlayed

Number of times an entry was played.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0	0x0...0xFFFF	1	none

## Rating

Rating of this entry. Higher is better. To map the number to the frequently used 5 star rating, use the following table:

- 0 = not rated
- 1-51 = Rating 1
- 52-102 = Rating 2
- 103-153 = Rating 3
- 154-204 = Rating 4
- 205-255 = Rating 5

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	0...255	1	none

## CreationTime

Date/Time this entry was created (possibly the file creation time). Time is UTC in ms since 1/1/1970.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	ms

## Comment

Comment for this entry.

Basis data type	MaxSize
String	255

## Filename

Name of the file, without directory information.

Basis data type	MaxSize
String	255

## FilenameTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Directory

Directory as a stream.

Basis data type	Length	Condition	Description
Stream		-	Content: <a href="#">Options</a> , <a href="#">SessionID</a> , <a href="#">NumberDirectories</a> , <a href="#">SubDirectory</a>

## DirectoryTag

Unique identifier.

Basis data type	Length	Min. Length	Condition	Description
Stream	260	5	-	Content: <a href="#">Options</a> , <a href="#">SessionID</a> , <a href="#">NumberDirectories</a> , <a href="#">SubDirectoryTag</a>

## PlaylistName

Name of a Playlist

Basis data type	MaxSize
String	255

## PlaylistNameTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## FileSize

Size of the media title as stored on disk. Unit is bytes.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	none

## FileStatus

The status of the file.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x03	0x00	Unknown	Unknown
		0x01	OK	OK
		0x02	Corrupted	Corrupted
		0x03	DeadLink	Dead Link

## Artist

Name of the Artist

Basis data type	MaxSize
String	255

## ArtistTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Album

Name of the Album

Basis data type	MaxSize
String	255

## AlbumTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## AlbumArtist

Name of the album's artist. It is used, for example, in compilation albums as "Various Artists" or cooperation albums containing tracks of a main artist "featuring" or "with" other artists. The AlbumArtist value then contains the main artist.

Basis data type	MaxSize
String	#NULL#

## AlbumArtistTag

Unique identifier.

Basis data type	MaxSize
String	#NULL#

## AudioGenre

Genre of the audio piece

Basis data type	MaxSize
String	255

## AudioGenreTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Composer

Composer name of the audio piece

Basis data type	MaxSize
String	255

## ComposerTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Grouping

Basis data type	MaxSize
String	255

## GroupingTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Opus

Opus this audio entry belongs to

Basis data type	MaxSize
String	255

## OpusTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Soloist

Soloist(s) who have performed this title

Basis data type	MaxSize
String	255

## SoloistTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Conductor

Conductor who has conducted this title

Basis data type	MaxSize
String	255

## ConductorTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Ensemble

Ensemble which has played this title

Basis data type	MaxSize
String	255

## EnsembleTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	



## TrackNumber

Track number of the title, e.g., on a CD

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0		1	none

## TracksInAlbum

Number of tracks on the corresponding CD, related to the TrackNumber.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	0x0...0xFF	1	none

## PlayTime

Length of the title in ms.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	ms

## AudioType

Type of the audio.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x04	0x00	Unknown	Unknown
		0x01	NotApplicable	Not Applicable
		0x02	NormalAudio	Normal Audio
		0x03	Audiobook	Audiobook
		0x04	Podcast	Podcast

## FileFormatAudio

Audio Codec

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x16	0x00	Unknown	Unknown
		0x01	CompressedAudio	Compressed Audio
		0x02	MP3	MP3
		0x03	WMA	WMA
		0x04	AAC	AAC
		0x05	OGGVorbis	OGGVorbis
		0x06	ATRAC	ATRAC
		0x07	MP3Pro	MP3Pro
		0x08	WAV	WAV
		0x09	Real	Real
		0x0A	FLAC	FLAC
		0x0B	Reserved1	Reserved
		0x0C	Reserved2	Reserved
		0x0D	Reserved3	Reserved
		0x0E	Reserved4	Reserved
		0x0F	Reserved5	Reserved
		0x10	AMR	AMR
		0x11	CELP	CELP
		0x12	GSM	GSM

Basis data type	Range of values	Code	Symbolic Name	Description
		0x13	iLBC	iLBC
		0x14	MELP	MELP
		0x15	Speex	Speex
		0x16	ITUG711_G729	ITU G.711-G.729

## BitrateAudio

A positive value indicates a constant bitrate (CBR) as given. A negative value indicates a variable bitrate (VBR), averaging at the given bitrate.

Basis data type	Exp.	Range of values	Step	Unit
Signed Word	0	0x0...0xFFFF	1	none

## SamplerateAudio

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	none

## MaxChartPosition

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0		1	none

## AudioData

The actual raw audio data.

Basis data type	Length	Media type
Classified Stream	255	audio/*

## VideoGenre

Genre of the video title

Basis data type	MaxSize
String	255

## VideoGenreTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Director

Name of the director

Basis data type	MaxSize
String	255

## DirectorTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Writer

Name of the Writer/Author

Basis data type	MaxSize
String	255

## WriterTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Producer

Name of the producer

Basis data type	MaxSize
String	255

## ProducerTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Distributor

Name of the distributor

Basis data type	MaxSize
String	255

## DistributorTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Country

Country in ISO-639-1 coding (two letters). Can contain more than one code, separated by Semicolon.

Basis data type	MaxSize
String	255

## AudioLanguages

List of audio languages in ISO-639-1 notation including the sound format for each language. These are two characters to determine the language; one character to determine the number of normal audio channels (front), one character to determine the number of normal audio channels (side/rear/surround) and one character to determine the number of LFE channels. Each entry is exactly 5 characters long. Entries are separated with semicolon. Example: "en200;en321;de200" means that the following audio streams are available: English, stereo (2.0); English, surround (5.1); German, stereo (2.0). "en000" can be used if the format is not relevant.

Basis data type	MaxSize
String	255

## SubtitleLanguages

List of subtitle languages in ISO-639-1 notation. Entries are separated with semicolon.

Basis data type	MaxSize
String	255

## VideoType

Type of the video.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x05	0x00	Unknown	Unknown
		0x01	NotApplicable	Not Applicable
		0x02	Movie	Movie
		0x03	TVShow	TV Show
		0x04	VideoPodcast	Video Podcast
		0x05	MusicVideo	Music Video

## FileFormatVideoContainer

Container Format of the Video File.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x0C	0x00	Unknown	Unknown
		0x01	MPEG1	MPEG-1
		0x02	MPEG2	MPEG-2
		0x03	MPEG4	MPEG-4
		0x04	3GP	3GP
		0x05	ASF	ASF
		0x06	Reserved	Reserved
		0x07	Matroska	Matroska
		0x08	Quicktime	Quicktime
		0x09	MXF	MXF
		0x0A	Ogg	Ogg

Basis data type	Range of values	Code	Symbolic Name	Description
		0x0B	Realmedia	Realmedia
		0x0C	AVI	AVI

## FileFormatVideoCodec

Codec used within the video file.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x0C	0x00	Unknown	Unknown
		0x01	MPEG1	MPEG-1
		0x02	MPEG2	MPEG-2
		0x03	MPEG4	MPEG-4
		0x04	H264	H.264
		0x05	DV	DV
		0x06	Real	Real
		0x07	wmv	wmv
		0x08	ogg	ogg
		0x09	cinepak	cinepak
		0x0A	indeo	indeo
		0x0B	HuffyUV	HuffyUV
		0x0C	DivX	DivX

## ResolutionWidth

Width of the video's resolution

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0	0x0...0xFFFF	1	none

## ResolutionHeight

Height of the video's resolution

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0	0x0...0xFFFF	1	none

## BitrateVideo

A positive value indicates a constant bitrate (CBR) as given. A negative value indicates a variable bitrate (VBR), averaging at the given bitrate.

Basis data type	Exp.	Range of values	Step	Unit
Signed Word	0	0x0...0xFFFF	1	none

## FramerateVideo

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	none

## VideoDescription

Free text

Basis data type	MaxSize
String	255

## VideoDescriptionTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## VideoData

The actual raw video data.

Basis data type	Length	Media type
Classified Stream	255	video/*

## PictureDescription

Free text

Basis data type	MaxSize
String	255

## PictureDescriptionTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## RollNumber

If photos are organized into rolls, this can be used to identify them by a number.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	none

## RollName

If photos are organized into rolls, this can be used to identify them by name.

Basis data type	MaxSize
String	255

## PictureType

Type of the picture/photo

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x04	0x00	Unknown	Unknown
		0x01	NotApplicable	Not Applicable
		0x02	Photo	Photo
		0x03	Drawing	Drawing
		0x04	Coverart	Coverart

## PictureTime

Time in Milliseconds since start of Track or Presentation (for CoverArt or SlideShows).

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	ms

## PictureData

The actual raw picture data.

Basis data type	Length	Media type
Classified Stream	255	image/*

## 2.1.20 SelectMediaListFilter (0x4B1)

Occurrence: Optional

Set a Filter for the list of titles to play. Use SelectCurrentMediaListInfo to receive information about the number of titles selected by the filter and about the titles themselves. Note that SelectMediaListInfo with the same filter may produce a different result than SelectCurrentMediaListInfo if the titles have changed through an external mechanism (cmp. to MediaListChanged). This means that the list of active titles selected by SelectMediaListFilter does **not** change even if titles are added/changed/removed in the library. If no sort order is set, the sort order of the titles within the filtered result list is determined by a player internal mechanism. If a sort order has been set, then the ordering of the titles which are equal according to the given sort order is determined by a player internal mechanism.

When Database Navigation and SelectMediaListFilter are used, the function TrackPosition is used to enumerate the titles which have been selected through SelectMediaListFilter. CurrentMediaListFilter function can be used to query the actual Filter and get notification on it.

This method does not affect the DeckStatus property. The controller should use other functions like DeckStatus, TrackPosition to achieve required HMI functionality.

### 2.1.20.1 Format of Function

**Function classes:** Unclassified Method

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	SelectMediaList Filter (0x4B1)	StartResultAck	<a href="#">SenderHandle</a> , <a href="#">Selector</a> , <a href="#">RequestData</a>
		AbortAck	<a href="#">SenderHandle</a>
		ErrorAck	<a href="#">SenderHandle</a> , ErrorCode, ErrorInfo
		ProcessingAck	<a href="#">SenderHandle</a>
		ResultAck	<a href="#">SenderHandle</a>

### 2.1.20.2 Parameter

#### SenderHandle

Unique handle to identify the request.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

#### Selector

Selects the structure to use for the RequestData.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x07	0x00	TitleTag	TitleTag
		0x01	FilenameDirectory	Filename Directory
		0x02	Directory	Directory
		0x03	FilenameTag	FilenameTag
		0x04	FilenameTagDirectoryTag	FilenameTag DirectoryTag
		0x05	DirectoryTag	DirectoryTag
		0x06	SortOrderFilterColumnsFilterData	SortOrder FilterColumns FilterData
		0x07	GlobalTag	GlobalTag



## RequestData

A container for the request data.

Basis data type	Length	Condition	Description
Stream		Selector = 0x00	Content: <a href="#">TitleTag</a>
		Selector = 0x01	Content: <a href="#">Filename</a> , <a href="#">Directory</a>
		Selector = 0x02	Content: <a href="#">Directory</a>
		Selector = 0x03	Content: <a href="#">FilenameTag</a>
		Selector = 0x04	Content: <a href="#">FilenameTag</a> , <a href="#">DirectoryTag</a>
		Selector = 0x05	Content: <a href="#">DirectoryTag</a>
		Selector = 0x06	Content: <a href="#">SortOrder1</a> , <a href="#">SortOrder2</a> , <a href="#">SortOrder3</a> , <a href="#">FilterColumns</a> , <a href="#">FilterData</a>
		Selector = 0x07	Content: <a href="#">GlobalTag</a>

## TitleTag

Basis data type	Max. Length	Description
Short Stream	255	

## Filename

Basis data type	MaxSize
String	#NULL#

## Directory

Basis data type	Length	Condition	Description
Stream		-	Content: <a href="#">Options</a> , <a href="#">SessionID</a> , <a href="#">NumberDirectories</a> , <a href="#">SubDirectory</a>

## Options

The Options parameter indicates how to interpret the directory information. If "Exclude Subdirectories" is set, only the directory itself and possibly the files directly within the directory are considered. If "Exclude Directory itself" is set, then the files within the given directory are ignored. "Relative Directory Access" is used to inform that this directory can be located anywhere in the directory tree and must not start at the root. If SessionID is also given, then the relative directory is considered relative to the directory that was previously defined within the same session. An absolute directory in combination with a SessionID will set the directory within the session to the specified directory. The option indicating whether the first directory string is a Drive can, e.g., be used to beautify the display: with a drive first, typically there is no prepended slash, e.g., C:/subdir/ compared to /rootdir/subdir/. Also see the description for AuxDeviceInfo->DeviceName for a preferred way to name drives.

Basis data type	Bit #	Code	Description
Unsigned Byte	Bit 0	False	Absolute Directory Access
		True	Relative Directory Access
	Bit 1	False	Include Subdirectories
		True	Exclude Subdirectories
	Bit 2	False	Include Directory itself
		True	Exclude Directory itself
	Bit 3	False	The first directory string is a regular subdirectory
		True	The first directory string is a drive, e.g., C:
	Bit 4	False	Return an error, typically 0x20 0x04.
		True	Ignore (i.e. assume an empty directory) problem if the given directory does not

Basis data type	Bit #	Code	Description
			exist.

## SessionID

A Session ID within which the directory can be referenced relative to the previous access.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	none

## NumberDirectories

The number of directory entries following this entry.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	0x0...0xFF	1	none

## SubDirectory

SubDirectory is repeated n times as given in NumberDirectories. This makes the total number of entries within the stream n+3 (Options plus SessionID plus NumberDirectories (=n) plus n SubDirectories).

Basis data type	MaxSize
String	255

## FilenameTag

Basis data type	Max. Length	Description
Short Stream	255	

## DirectoryTag

Basis data type	Length	Min. Length	Condition	Description
Stream	260	5	-	Content: <a href="#">Options</a> , <a href="#">SessionID</a> , <a href="#">NumberDirectories</a> , <a href="#">SubDirectoryTag</a>

## SubDirectoryTag

SubDirectoryTag is repeated n times as given in NumberDirectories. This makes the total number of entries within the stream n+3 (Options plus SessionID plus NumberDirectories (=n) plus n SubDirectoryTags).

Basis data type	Max. Length	Description
Short Stream	255	

## SortOrder1

SortOrder1, SortOrder2 and SortOrder3 indicate which record element of MediaData is to be used for ordering the result. The parameters are applied consecutively from 1 to 3 with the rule that a later SortOrder only sorts entries that are equal after the previous application of SortOrder criteria. E.g., first

sort by genre and for those titles with equal genres then sort by artist.

Positive numbers for SortOrder[1,2,3] indicate ascending order, negative numbers indicate descending order. The number used is equal to the position of the stream parameter in the stream case that is selected by the current value of ResultColumns. The first stream parameter corresponds to a value of 0x01.

A value of 0x00 will apply default sort order of the device.

Basis data type	Exp.	Range of values	Step	Unit
Signed Word	0		1	none

## SortOrder2

Basis data type	Exp.	Range of values	Step	Unit
Signed Word	0		1	none

## SortOrder3

Basis data type	Exp.	Range of values	Step	Unit
Signed Word	0		1	none

## FilterColumns

FilterColumns indicates which elements are of interest to the requester. Elements which are not relevant for filtering are not part of the FilterData data stream.

**Note:** Value 0xFF is predefined and matches the entire set of possible stream parameters.

Correspondence Filters have a special meaning and to function correctly typically require certain FilterData elements to be present. Example: When the Correspondence Filter CoverArt is set, PictureData is typically requested while a specific audio title (e.g., identified by a TitleTag) is sent in the filter.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0		1	none

## FilterData

FilterData is used for setting a filter for record elements to match certain criteria.

Basis data type	Length	Condition	Description
Stream		FilterColumns = 0xFF	Content: <a href="#">GlobalTagFilter</a> , <a href="#">TitleFilter</a> , <a href="#">TitleTagFilter</a> , <a href="#">YearFilter</a> , <a href="#">SecuredFilter</a> , <a href="#">TimesPlayedFilter</a> , <a href="#">RatingFilter</a> , <a href="#">CreationTimeFilter</a> , <a href="#">CommentFilter</a> , <a href="#">FilenameFilter</a> , <a href="#">FilenameTagFilter</a> , <a href="#">DirectoryFilter</a> , <a href="#">DirectoryTagFilter</a> , <a href="#">PlaylistNameFilter</a> , <a href="#">PlaylistNameTagFilter</a> , <a href="#">FileSizeFilter</a> , <a href="#">FileStatusFilter</a> , <a href="#">ArtistFilter</a> , <a href="#">ArtistTagFilter</a> , <a href="#">AlbumFilter</a> , <a href="#">AlbumTagFilter</a> , <a href="#">AlbumArtistFilter</a> , <a href="#">AlbumArtistTagFilter</a> , <a href="#">AudioGenreFilter</a> , <a href="#">AudioGenreTagFilter</a> , <a href="#">ComposerFilter</a> , <a href="#">ComposerTagFilter</a> , <a href="#">GroupingFilter</a> , <a href="#">GroupingTagFilter</a> , <a href="#">OpusFilter</a> , <a href="#">OpusTagFilter</a> , <a href="#">SoloistFilter</a> , <a href="#">SoloistTagFilter</a> , <a href="#">ConductorFilter</a> , <a href="#">ConductorTagFilter</a> , <a href="#">EnsembleFilter</a> ,

Basis data type	Length	Condition	Description
			<a href="#">EnsembleTagFilter</a> , <a href="#">TrackNumberFilter</a> , <a href="#">TracksInAlbumFilter</a> , <a href="#">PlayTimeFilter</a> , <a href="#">AudioTypeFilter</a> , <a href="#">FileFormatAudioFilter</a> , <a href="#">BitrateAudioFilter</a> , <a href="#">SamplerateAudioFilter</a> , <a href="#">MaxChartPositionFilter</a> , <a href="#">VideoGenreFilter</a> , <a href="#">VideoGenreTagFilter</a> , <a href="#">DirectorFilter</a> , <a href="#">DirectorTagFilter</a> , <a href="#">WriterFilter</a> , <a href="#">WriterTagFilter</a> , <a href="#">ProducerFilter</a> , <a href="#">ProducerTagFilter</a> , <a href="#">DistributorFilter</a> , <a href="#">DistributorTagFilter</a> , <a href="#">CountryFilter</a> , <a href="#">AudioLanguagesFilter</a> , <a href="#">SubtitleLanguagesFilter</a> , <a href="#">VideoTypeFilter</a> , <a href="#">FileFormatVideoContainerFilter</a> , <a href="#">FileFormatVideoCodecFilter</a> , <a href="#">ResolutionWidthFilter</a> , <a href="#">ResolutionHeightFilter</a> , <a href="#">BitrateVideoFilter</a> , <a href="#">FramerateVideoFilter</a> , <a href="#">VideoDescriptionFilter</a> , <a href="#">VideoDescriptionTagFilter</a> , <a href="#">PictureDescriptionFilter</a> , <a href="#">PictureDescriptionTagFilter</a> , <a href="#">RollNumberFilter</a> , <a href="#">RollNameFilter</a> , <a href="#">PictureTypeFilter</a> , <a href="#">PictureTimeFilter</a> , <a href="#">BoolOp</a>

## GlobalTagFilter

A global tag which individually identifies each entry of each response. It is possible to create this tag by using a tag type identifier and then appending the type specific tag, e.g., "01" + TitleTag.

Basis data type	Max. Length	Description
Short Stream	255	

## TitleFilter

Title of this entry

Basis data type	MaxSize
String	#NULL#

## TitleTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## YearFilter

Year of publication of this entry.

Basis data type	MaxSize
String	#NULL#

## SecuredFilter

Describes whether the entry is DRM protected and which system is used.

Basis data type	Bit #	Code	Description
BitField Size: 2	Bit 0	False	-
		True	Not Secured
	Bit 1	False	-
		True	Unknown DRM
	Bit 2	False	-
		True	WMDRM9
	Bit 3	False	-
		True	WMRM10
	Bit 4	False	-
		True	WMRM11
	Bit 5	False	-
		True	Fairplay
	Bit 6	False	-
		True	Audible

## TimesPlayedFilter

Number of times an entry was played.

Basis data type	MaxSize
String	#NULL#

## RatingFilter

Rating of this entry. Higher value is better.

Basis data type	MaxSize
String	#NULL#

## CreationTimeFilter

Date this entry was created (possibly the file creation time). Time is UTC in ms since 1/1/1970.

Basis data type	MaxSize
String	#NULL#

## CommentFilter

Comment for this entry.

Basis data type	MaxSize
String	#NULL#

## FilenameFilter

Name of the file, without directory information.

Basis data type	MaxSize
String	#NULL#

## FilenameTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## DirectoryFilter

Directory as a stream.

Basis data type	Length	Condition	Description
Stream		-	Content: <a href="#">Options</a> , <a href="#">SessionID</a> , <a href="#">NumberDirectories</a> , <a href="#">SubDirectory</a>

## DirectoryTagFilter

Unique identifier.

Basis data type	Length	Min. Length	Condition	Description
Stream	260	5	-	Content: <a href="#">Options</a> , <a href="#">SessionID</a> , <a href="#">NumberDirectories</a> , <a href="#">SubDirectoryTag</a>

## PlaylistNameFilter

Name of a Playlist

Basis data type	MaxSize
String	#NULL#

## PlaylistNameTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## FileSizeFilter

Size of the media title as stored on disk. Unit is bytes.

Basis data type	MaxSize
String	#NULL#

## FileStatusFilter

The status of the file

Basis data type	Bit #	Code	Description
BitField Size: 1	Bit 0	False	-
		True	Unknown

Basis data type	Bit #	Code	Description
	Bit 1	False	-
		True	OK
	Bit 2	False	-
		True	Corrupted
	Bit 3	False	-
		True	Dead Link

### ArtistFilter

Name of the Artist

Basis data type	MaxSize
String	#NULL#

### ArtistTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

### AlbumFilter

Name of the Album

Basis data type	MaxSize
String	#NULL#

### AlbumTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

### AlbumArtistFilter

Name of the album's artist. It is used, for example, in compilation albums as "Various Artists" or cooperation albums containing tracks of a main artist "featuring" or "with" other artists. The AlbumArtist value then contains the main artist.

Basis data type	MaxSize
String	#NULL#

### AlbumArtistTagFilter

Unique identifier.

Basis data type	MaxSize
String	#NULL#

## AudioGenreFilter

Genre of the audio piece

Basis data type	MaxSize
String	#NULL#

## AudioGenreTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## ComposerFilter

Composer name of the audio piece

Basis data type	MaxSize
String	#NULL#

## ComposerTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## GroupingFilter

Basis data type	MaxSize
String	#NULL#

## GroupingTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## OpusFilter

Opus this audio entry belongs to

Basis data type	MaxSize
String	#NULL#



## OpusTagFilter

---

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## SoloistFilter

---

Soloist(s) who have performed this title

Basis data type	MaxSize
String	#NULL#

## SoloistTagFilter

---

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## ConductorFilter

---

Conductor who has conducted this title

Basis data type	MaxSize
String	#NULL#

## ConductorTagFilter

---

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## EnsembleFilter

---

Ensemble which has played this title

Basis data type	MaxSize
String	#NULL#

## EnsembleTagFilter

---

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## TrackNumberFilter

Track number of the title, e.g., on a CD

Basis data type	MaxSize
String	#NULL#

## TracksInAlbumFilter

Number of tracks on the corresponding CD, related to the TrackNumber.

Basis data type	MaxSize
String	#NULL#

## PlayTimeFilter

Basis data type	MaxSize
String	#NULL#

## AudioTypeFilter

Type of the audio.

Basis data type	Bit #	Code	Description
BitField Size: 2	Bit 0	False	-
		True	Unknown
	Bit 1	False	-
		True	Reserved
	Bit 2	False	-
		True	Normal Audio
	Bit 3	False	-
		True	Audiobook
	Bit 4	False	-
		True	Podcast

## FileFormatAudioFilter

Basis data type	Bit #	Code	Description
BitField Size: 8	Bit 0	False	-
		True	reserved
	Bit 1	False	-
		True	Compressed Audio
	Bit 2	False	-
		True	MP3
	Bit 3	False	-
		True	WMA
	Bit 4	False	-
		True	AAC
	Bit 5	False	-
		True	OGGVorbis
	Bit 6	False	-
		True	ATRAC
	Bit 7	False	-
		True	MP3Pro
	Bit 8	False	-
		True	WAV

Basis data type	Bit #	Code	Description
	Bit 9	False	-
		True	reserved
	Bit 10	False	-
		True	FLAC
	Bit 11	False	-
		True	Reserved
	Bit 12	False	-
		True	Reserved
	Bit 13	False	-
		True	Reserved
	Bit 14	False	-
		True	Reserved
	Bit 15	False	-
		True	Reserved
	Bit 16	False	-
		True	AMR
	Bit 17	False	-
		True	CELP
	Bit 18	False	-
		True	GSM
	Bit 19	False	-
		True	iLBC
	Bit 20	False	-
		True	MELP
	Bit 21	False	-
		True	Speex
	Bit 22	False	-
		True	ITU G.711-G.729

## BitrateAudioFilter

A positive value indicates a constant bitrate (CBR) as given. A negative value indicates a variable bitrate (VBR), averaging at the given bitrate.

Basis data type	MaxSize
String	#NULL#

## SamplerateAudioFilter

Basis data type	MaxSize
String	#NULL#

## MaxChartPositionFilter

Basis data type	MaxSize
String	#NULL#

## VideoGenreFilter

Genre of the video title

Basis data type	MaxSize
String	#NULL#

## VideoGenreTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## DirectorFilter

Name of the director

Basis data type	MaxSize
String	#NULL#

## DirectorTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## WriterFilter

Name of the Writer/Author

Basis data type	MaxSize
String	#NULL#

## WriterTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## ProducerFilter

Name of the producer

Basis data type	MaxSize
String	#NULL#

## ProducerTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## DistributorFilter

Name of the distributor

Basis data type	MaxSize
String	#NULL#

## DistributorTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## CountryFilter

Country in ISO-639-1 coding (two letters). Can contain more than one code, separated by Semicolon.

Basis data type	MaxSize
String	#NULL#

## AudioLanguagesFilter

List of audio languages in ISO-639-1 notation including the sound format for each language. These are two characters to determine the language; one character to determine the number of normal audio channels (front), one character to determine the number of normal audio channels (side/rear/surround) and one character to determine the number of LFE channels. Each entry is exactly 5 characters long. Entries are separated with semicolon. Example: "en200;en321;de200" means that the following audio streams are available: English, stereo (2.0); English, surround (5.1); German, stereo (2.0). "en000" can be used if the format is not relevant.

Basis data type	MaxSize
String	#NULL#

## SubtitleLanguagesFilter

List of subtitle languages in ISO-639-1 notation. Entries are separated with semicolon.

Basis data type	MaxSize
String	#NULL#

## VideoTypeFilter

Type of the video.

Basis data type	Bit #	Code	Description
BitField Size: 2	Bit 0	False	-
		True	Unknown
	Bit 1	False	-
		True	Reserved
	Bit 2	False	-
		True	Movie
	Bit 3	False	-

Basis data type	Bit #	Code	Description
	Bit 4	True	TV Show
		False	-
	Bit 5	True	Video Podcast
		False	-
		True	Music Video

## FileFormatVideoContainerFilter

Container Format of the Video File.

Basis data type	Bit #	Code	Description
BitField Size: 4	Bit 0	False	-
		True	Unknown
	Bit 1	False	-
		True	MPEG-1
	Bit 2	False	-
		True	MPEG-2
	Bit 3	False	-
		True	MPEG-4
	Bit 4	False	-
		True	3GP
	Bit 5	False	-
		True	ASF
	Bit 6	False	-
		True	Reserved
	Bit 7	False	-
		True	Matroska
	Bit 8	False	-
		True	Quicktime
	Bit 9	False	-
		True	MXF
	Bit 10	False	-
		True	Ogg
	Bit 11	False	-
		True	Realmedia
	Bit 12	False	-
		True	AVI

## FileFormatVideoCodecFilter

Codec used within the video file.

Basis data type	Bit #	Code	Description
BitField Size: 4	Bit 0	False	-
		True	Unknown
	Bit 1	False	-
		True	MPEG-1
	Bit 2	False	-
		True	MPEG-2
	Bit 3	False	-
		True	MPEG-4
	Bit 4	False	-
		True	H.264
	Bit 5	False	-
		True	DV
	Bit 6	False	-
		True	Real
	Bit 7	False	-

Basis data type	Bit #	Code	Description
	Bit 8	True	wmv
		False	-
		True	ogg
	Bit 9	False	-
		True	cinepak
		False	-
	Bit 10	True	indeo
		False	-
		True	HuffYUV
	Bit 11	False	-
		True	HuffYUV
		False	-
	Bit 12	False	-
		True	DivX
		True	DivX

## ResolutionWidthFilter

Width of the video's resolution

Basis data type	MaxSize
String	#NULL#

## ResolutionHeightFilter

Height of the video's resolution

Basis data type	MaxSize
String	#NULL#

## BitrateVideoFilter

A positive value indicates a constant bitrate (CBR) as given. A negative value indicates a variable bitrate (VBR), averaging at the given bitrate.

Basis data type	MaxSize
String	#NULL#

## FramerateVideoFilter

Basis data type	MaxSize
String	#NULL#

## VideoDescriptionFilter

Free text

Basis data type	MaxSize
String	#NULL#

## VideoDescriptionTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## PictureDescriptionFilter

Free text

Basis data type	MaxSize
String	#NULL#

## PictureDescriptionTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## RollNumberFilter

If photos are organized into rolls, this can be used to identify them by a number.

Basis data type	MaxSize
String	#NULL#

## RollNameFilter

If photos are organized into rolls, this can be used to identify them by name.

Basis data type	MaxSize
String	#NULL#

## PictureTypeFilter

Type of the picture/photo

Basis data type	Bit #	Code	Description
BitField Size: 2	Bit 0	False	-
		True	Unknown
	Bit 1	False	-
		True	Reserved
	Bit 2	False	-
		True	Photo
	Bit 3	False	-
		True	Drawing
	Bit 4	False	-
		True	Coverart

## PictureTimeFilter

Time the photo was taken. Time is UTC in ms since 1/1/1970.

Basis data type	MaxSize
String	#NULL#



## BoolOp

---

BoolOp is a meta-tag which indicates how to combine the array elements when filtering. With regards to evaluation, AND takes precedence over OR.

Basis data type	Bit #	Code	Description
Boolean	Bit 0	True	AND
		False	OR

## GlobalTag

Basis data type	Max. Length	Description
Short Stream	255	

## 2.1.21 CurrentMediaListFilter (0x4B2)

Occurrence: Optional

Property which is used by the controller to query the current AudioFilter which is used for playback. Setting the filter is done using SelectMediaListFilter method. An unknown filter is signaled with BoolOp value.

### 2.1.21.1 Format of Function

**Function classes:** Unclassified Property

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	CurrentMediaList Filter (0x4B2)	Get	-
		Status	<a href="#">Selector</a> , <a href="#">ResponseData</a>
		Error	ErrorCode, ErrorInfo

### 2.1.21.2 Parameter

#### Selector

Identifies the structure used in ResponseData.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x07	0x00	TitleTag	TitleTag
		0x01	FilenameDirectory	Filename Directory
		0x02	Directory	Directory
		0x03	FilenameTag	FilenameTag
		0x04	FilenameTagDirectoryTag	FilenameTag DirectoryTag
		0x05	DirectoryTag	DirectoryTag
		0x06	SortOrderFilterColumnsFilterData	SortOrder FilterColumns FilterData
		0x07	GlobalTag	GlobalTag

#### ResponseData

A container for the response data.

Basis data type	Length	Condition	Description
Stream		Selector = 0x00	Content: <a href="#">TitleTag</a>
		Selector = 0x01	Content: <a href="#">Filename</a> , <a href="#">Directory</a>
		Selector = 0x02	Content: <a href="#">Directory</a>
		Selector = 0x03	Content: <a href="#">FilenameTag</a>
		Selector = 0x04	Content: <a href="#">FilenameTag</a> , <a href="#">DirectoryTag</a>
		Selector = 0x05	Content: <a href="#">DirectoryTag</a>
		Selector = 0x06	Content: <a href="#">SortOrder1</a> , <a href="#">SortOrder2</a> , <a href="#">SortOrder3</a> , <a href="#">FilterColumns</a> , <a href="#">FilterData</a>
		Selector = 0x07	Content: <a href="#">GlobalTag</a>

#### TitleTag

Basis data type	Max. Length	Description
Short Stream	255	

## Filename

Basis data type	MaxSize
String	#NULL#

## Directory

Basis data type	Length	Condition	Description
Stream		-	Content: <a href="#">Options</a> , <a href="#">SessionID</a> , <a href="#">NumberDirectories</a> , <a href="#">SubDirectory</a>

## Options

The Options parameter indicates how to interpret the directory information. If "Exclude Subdirectories" is set, only the directory itself and possibly the files directly within the directory are considered. If "Exclude Directory itself" is set, then the files within the given directory are ignored. "Relative Directory Access" is used to inform that this directory can be located anywhere in the directory tree and must not start at the root. If SessionID is also given, then the relative directory is considered relative to the directory that was previously defined within the same session. An absolute directory in combination with a SessionID will set the directory within the session to the specified directory. The option indicating whether the first directory string is a Drive can, e.g., be used to beautify the display: with a drive first, typically there is no prepended slash, e.g., C:/subdir/ compared to /rootdir/subdir/. Also see the description for AuxDeviceInfo->DeviceName for a preferred way to name drives.

Basis data type	Bit #	Code	Description
Unsigned Byte	Bit 0	False	Absolute Directory Access
		True	Relative Directory Access
	Bit 1	False	Include Subdirectories
		True	Exclude Subdirectories
	Bit 2	False	Include Directory itself
		True	Exclude Directory itself
	Bit 3	False	The first directory string is a regular subdirectory
		True	The first directory string is a drive, e.g., C:
	Bit 4	False	Return an error, typically 0x20 0x04.
		True	Ignore (i.e. assume an empty directory) problem if the given directory does not exist.

## SessionID

A Session ID within which the directory can be referenced relative to the previous access.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	none

## NumberDirectories

The number of directory entries following this entry.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	0x0...0xFF	1	none

## SubDirectory

SubDirectory is repeated n times as given in NumberDirectories. This makes the total number of entries within the stream n+3 (Options plus SessionID plus NumberDirectories (=n) plus n SubDirectories).

Basis data type	MaxSize
String	255

## FilenameTag

Basis data type	Max. Length	Description
Short Stream	255	

## DirectoryTag

Basis data type	Length	Min. Length	Condition	Description
Stream	260	5	-	Content: <a href="#">Options</a> , <a href="#">SessionID</a> , <a href="#">NumberDirectories</a> , <a href="#">SubDirectoryTag</a>

## SortOrder1

SortOrder1, SortOrder2 and SortOrder3 indicate which record element of MediaData is to be used for ordering the result. The parameters are applied consecutively from 1 to 3 with the rule that a later SortOrder only sorts entries that are equal after the previous application of SortOrder criteria. E.g., first sort by genre and for those titles with equal genres then sort by artist.

Positive numbers for SortOrder[1,2,3] indicate ascending order, negative numbers indicate descending order. The number used is equal to the position of the stream parameter in the stream case that is selected by the current value of ResultColumns. The first stream parameter corresponds to a value of 0x01.

A value of 0x00 will apply default sort order of the device.

Basis data type	Exp.	Range of values	Step	Unit
Signed Word	0		1	none

## SortOrder2

Basis data type	Exp.	Range of values	Step	Unit
Signed Word	0		1	none

## SortOrder3

Basis data type	Exp.	Range of values	Step	Unit
Signed Word	0		1	none

## FilterColumns

FilterColumns indicates which elements are of interest to the requester. Elements which are not relevant for filtering are not part of the FilterData data stream.

**Note:** Value 0xFF is predefined and matches the entire set of possible stream parameters.

Correspondence Filters have a special meaning and to function correctly typically require certain FilterData elements to be present. Example: When the Correspondence Filter CoverArt is set, PictureData is typically requested while a specific audio title (e.g., identified by a TitleTag) is sent in the filter.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0		1	none

## FilterData

FilterData is used for setting a filter for record elements to match certain criteria.

Basis data type	Length	Condition	Description
Stream		FilterColumns = 0xFF	Content: <a href="#">GlobalTagFilter</a> , <a href="#">TitleFilter</a> , <a href="#">TitleTagFilter</a> , <a href="#">YearFilter</a> , <a href="#">SecuredFilter</a> , <a href="#">TimesPlayedFilter</a> , <a href="#">RatingFilter</a> , <a href="#">CreationTimeFilter</a> , <a href="#">CommentFilter</a> , <a href="#">FilenameFilter</a> , <a href="#">FilenameTagFilter</a> , <a href="#">DirectoryFilter</a> , <a href="#">DirectoryTagFilter</a> , <a href="#">PlaylistNameFilter</a> , <a href="#">PlaylistNameTagFilter</a> , <a href="#">FileSizeFilter</a> , <a href="#">FileStatusFilter</a> , <a href="#">ArtistFilter</a> , <a href="#">ArtistTagFilter</a> , <a href="#">AlbumFilter</a> , <a href="#">AlbumTagFilter</a> , <a href="#">AlbumArtistFilter</a> , <a href="#">AlbumArtistTagFilter</a> , <a href="#">AudioGenreFilter</a> , <a href="#">AudioGenreTagFilter</a> , <a href="#">ComposerFilter</a> , <a href="#">ComposerTagFilter</a> , <a href="#">GroupingFilter</a> , <a href="#">GroupingTagFilter</a> , <a href="#">OpusFilter</a> , <a href="#">OpusTagFilter</a> , <a href="#">SoloistFilter</a> , <a href="#">SoloistTagFilter</a> , <a href="#">ConductorFilter</a> , <a href="#">ConductorTagFilter</a> , <a href="#">EnsembleFilter</a> , <a href="#">EnsembleTagFilter</a> , <a href="#">TrackNumberFilter</a> , <a href="#">TracksInAlbumFilter</a> , <a href="#">PlayTimeFilter</a> , <a href="#">AudioTypeFilter</a> , <a href="#">FileFormatAudioFilter</a> , <a href="#">BitrateAudioFilter</a> , <a href="#">SamplerateAudioFilter</a> , <a href="#">MaxChartPositionFilter</a> , <a href="#">VideoGenreFilter</a> , <a href="#">VideoGenreTagFilter</a> , <a href="#">DirectorFilter</a> , <a href="#">DirectorTagFilter</a> , <a href="#">WriterFilter</a> , <a href="#">WriterTagFilter</a> , <a href="#">ProducerFilter</a> , <a href="#">ProducerTagFilter</a> , <a href="#">DistributorFilter</a> , <a href="#">DistributorTagFilter</a> , <a href="#">CountryFilter</a> , <a href="#">AudioLanguagesFilter</a> , <a href="#">SubtitleLanguagesFilter</a> , <a href="#">VideoTypeFilter</a> , <a href="#">FileFormatVideoContainerFilter</a> , <a href="#">FileFormatVideoCodecFilter</a> , <a href="#">ResolutionWidthFilter</a> , <a href="#">ResolutionHeightFilter</a> , <a href="#">BitrateVideoFilter</a> , <a href="#">FramerateVideoFilter</a> , <a href="#">VideoDescriptionFilter</a> , <a href="#">VideoDescriptionTagFilter</a> , <a href="#">PictureDescriptionFilter</a> , <a href="#">PictureDescriptionTagFilter</a> , <a href="#">RollNumberFilter</a> , <a href="#">RollNameFilter</a> , <a href="#">PictureTypeFilter</a> , <a href="#">PictureTimeFilter</a> , <a href="#">BoolOp</a>

## GlobalTagFilter

A global tag which individually identifies each entry of each response. It is possible to create this tag by using a tag type identifier and then appending the type specific tag, e.g., "01" + TitleTag.

Basis data type	Max. Length	Description
Short Stream	255	

## TitleFilter

Title of this entry

Basis data type	MaxSize
String	#NULL#

## TitleTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## YearFilter

Year of publication of this entry.

Basis data type	MaxSize
String	#NULL#

## SecuredFilter

Describes whether the entry is DRM protected and which system is used.

Basis data type	Bit #	Code	Description
BitField Size: 2	Bit 0	False	-
		True	Not Secured
	Bit 1	False	-
		True	Unknown DRM
	Bit 2	False	-
		True	WMDRM9
	Bit 3	False	-
		True	WMRM10
	Bit 4	False	-
		True	WMRM11
	Bit 5	False	-
		True	Fairplay
	Bit 6	False	-
		True	Audible

## TimesPlayedFilter

Number of times an entry was played.

Basis data type	MaxSize
String	#NULL#

## RatingFilter

Rating of this entry. Higher value is better.

Basis data type	MaxSize
String	#NULL#

## CreationTimeFilter

Date this entry was created (possibly the file creation time). Time is UTC in ms since 1/1/1970.

Basis data type	MaxSize
String	#NULL#

## CommentFilter

Comment for this entry.

Basis data type	MaxSize
String	#NULL#

## FilenameFilter

Name of the file, without directory information.

Basis data type	MaxSize
String	#NULL#

## FilenameTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## DirectoryFilter

Directory as a stream.

Basis data type	Length	Condition	Description
Stream		-	Content: <a href="#">Options</a> , <a href="#">SessionID</a> , <a href="#">NumberDirectories</a> , <a href="#">SubDirectory</a>

## DirectoryTagFilter

Unique identifier.

Basis data type	Length	Min. Length	Condition	Description
Stream	260	5	-	Content: <a href="#">Options</a> , <a href="#">SessionID</a> , <a href="#">NumberDirectories</a> , <a href="#">SubDirectoryTag</a>

## PlaylistNameFilter

Name of a Playlist

Basis data type	MaxSize
String	#NULL#

## PlaylistNameTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## FileSizeFilter

Size of the media title as stored on disk. Unit is bytes.

Basis data type	MaxSize
String	#NULL#

## FileStatusFilter

The status of the file

Basis data type	Bit #	Code	Description
BitField Size: 1	Bit 0	False	-
		True	Unknown
	Bit 1	False	-
		True	OK
	Bit 2	False	-
		True	Corrupted
	Bit 3	False	-
		True	Dead Link

## ArtistFilter

Name of the Artist

Basis data type	MaxSize
String	#NULL#



## ArtistTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## AlbumFilter

Name of the Album

Basis data type	MaxSize
String	#NULL#

## AlbumTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## AlbumArtistFilter

Name of the album's artist. It is used, for example, in compilation albums as "Various Artists" or cooperation albums containing tracks of a main artist "featuring" or "with" other artists. The AlbumArtist value then contains the main artist.

Basis data type	MaxSize
String	#NULL#

## AlbumArtistTagFilter

Unique identifier.

Basis data type	MaxSize
String	#NULL#

## AudioGenreFilter

Genre of the audio piece

Basis data type	MaxSize
String	#NULL#

## AudioGenreTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## ComposerFilter

Composer name of the audio piece

Basis data type	MaxSize
String	#NULL#

## ComposerTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## GroupingFilter

Basis data type	MaxSize
String	#NULL#

## GroupingTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## OpusFilter

Opus this audio entry belongs to

Basis data type	MaxSize
String	#NULL#

## OpusTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## SoloistFilter

Soloist(s) who have performed this title

Basis data type	MaxSize
String	#NULL#

## SoloistTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## ConductorFilter

Conductor who has conducted this title

Basis data type	MaxSize
String	#NULL#

## ConductorTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## EnsembleFilter

Ensemble which has played this title

Basis data type	MaxSize
String	#NULL#

## EnsembleTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## TrackNumberFilter

Track number of the title, e.g., on a CD

Basis data type	MaxSize
String	#NULL#

## TracksInAlbumFilter

Number of tracks on the corresponding CD, related to the TrackNumber.

Basis data type	MaxSize
String	#NULL#

## PlayTimeFilter

Basis data type	MaxSize
String	#NULL#

## AudioTypeFilter

Type of the audio.

Basis data type	Bit #	Code	Description
BitField Size: 2	Bit 0	False	-
		True	Unknown
	Bit 1	False	-
		True	Reserved
	Bit 2	False	-
		True	Normal Audio
	Bit 3	False	-
		True	Audiobook
	Bit 4	False	-
		True	Podcast

## FileFormatAudioFilter

Basis data type	Bit #	Code	Description
BitField Size: 8	Bit 0	False	-
		True	reserved
	Bit 1	False	-
		True	Compressed Audio
	Bit 2	False	-
		True	MP3
	Bit 3	False	-
		True	WMA
	Bit 4	False	-
		True	AAC
	Bit 5	False	-
		True	OGGVorbis
	Bit 6	False	-
		True	ATRAC
	Bit 7	False	-
		True	MP3Pro
	Bit 8	False	-
		True	WAV
	Bit 9	False	-
		True	reserved
	Bit 10	False	-
		True	FLAC
	Bit 11	False	-
		True	Reserved
	Bit 12	False	-
		True	Reserved
	Bit 13	False	-
		True	Reserved
	Bit 14	False	-
		True	Reserved
	Bit 15	False	-
		True	Reserved
	Bit 16	False	-
		True	AMR
	Bit 17	False	-

Basis data type	Bit #	Code	Description
	Bit 18	True	CELP
		False	-
		True	GSM
	Bit 19	False	-
		True	iLBC
		False	-
	Bit 20	True	MELP
		False	-
		True	Speex
	Bit 21	False	-
		True	Speex
	Bit 22	False	-
		True	ITU G.711-G.729

## BitrateAudioFilter

A positive value indicates a constant bitrate (CBR) as given. A negative value indicates a variable bitrate (VBR), averaging at the given bitrate.

Basis data type	MaxSize
String	#NULL#

## SamplerateAudioFilter

Basis data type	MaxSize
String	#NULL#

## MaxChartPositionFilter

Basis data type	MaxSize
String	#NULL#

## VideoGenreFilter

Genre of the video title

Basis data type	MaxSize
String	#NULL#

## VideoGenreTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## DirectorFilter

Name of the director

Basis data type	MaxSize
String	#NULL#

## DirectorTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## WriterFilter

Name of the Writer/Author

Basis data type	MaxSize
String	#NULL#

## WriterTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## ProducerFilter

Name of the producer

Basis data type	MaxSize
String	#NULL#

## ProducerTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## DistributorFilter

Name of the distributor

Basis data type	MaxSize
String	#NULL#

## DistributorTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## CountryFilter

Country in ISO-639-1 coding (two letters). Can contain more than one code, separated by Semicolon.

Basis data type	MaxSize
String	#NULL#

## AudioLanguagesFilter

List of audio languages in ISO-639-1 notation including the sound format for each language. These are two characters to determine the language; one character to determine the number of normal audio channels (front), one character to determine the number of normal audio channels (side/rear/surround) and one character to determine the number of LFE channels. Each entry is exactly 5 characters long. Entries are separated with semicolon. Example: "en200;en321;de200" means that the following audio streams are available: English, stereo (2.0); English, surround (5.1); German, stereo (2.0). "en000" can be used if the format is not relevant.

Basis data type	MaxSize
String	#NULL#

## SubtitleLanguagesFilter

List of subtitle languages in ISO-639-1 notation. Entries are separated with semicolon.

Basis data type	MaxSize
String	#NULL#

## VideoTypeFilter

Type of the video.

Basis data type	Bit #	Code	Description
BitField Size: 2	Bit 0	False	-
		True	Unknown
	Bit 1	False	-
		True	Reserved
	Bit 2	False	-
		True	Movie
	Bit 3	False	-
		True	TV Show
	Bit 4	False	-
		True	Video Podcast
	Bit 5	False	-
		True	Music Video

## FileFormatVideoContainerFilter

Container Format of the Video File.

Basis data type	Bit #	Code	Description
BitField Size: 4	Bit 0	False	-
		True	Unknown
	Bit 1	False	-
		True	MPEG-1
	Bit 2	False	-
		True	-

Basis data type	Bit #	Code	Description
	Bit 3	True	MPEG-2
		False	-
	Bit 4	True	MPEG-4
		False	-
	Bit 5	True	3GP
		False	-
	Bit 6	True	ASF
		False	-
	Bit 7	True	Reserved
		False	-
	Bit 8	True	Matroska
		False	-
	Bit 9	True	Quicktime
		False	-
	Bit 10	True	MXF
		False	-
	Bit 11	True	Ogg
		False	-
	Bit 12	True	Realmedia
		False	-
		True	AVI
		False	-

## FileFormatVideoCodecFilter

Codec used within the video file.

Basis data type	Bit #	Code	Description
BitField Size: 4	Bit 0	False	-
		True	Unknown
	Bit 1	False	-
		True	MPEG-1
	Bit 2	False	-
		True	MPEG-2
	Bit 3	False	-
		True	MPEG-4
	Bit 4	False	-
		True	H.264
	Bit 5	False	-
		True	DV
	Bit 6	False	-
		True	Real
	Bit 7	False	-
		True	wmv
	Bit 8	False	-
		True	ogg
	Bit 9	False	-
		True	cinepak
	Bit 10	False	-
		True	indeo
	Bit 11	False	-
		True	HuffYUV
	Bit 12	False	-
		True	DivX



### ResolutionWidthFilter

Width of the video's resolution

Basis data type	MaxSize
String	#NULL#

### ResolutionHeightFilter

Height of the video's resolution

Basis data type	MaxSize
String	#NULL#

### BitrateVideoFilter

A positive value indicates a constant bitrate (CBR) as given. A negative value indicates a variable bitrate (VBR), averaging at the given bitrate.

Basis data type	MaxSize
String	#NULL#

### FramerateVideoFilter

Basis data type	MaxSize
String	#NULL#

### VideoDescriptionFilter

Free text

Basis data type	MaxSize
String	#NULL#

### VideoDescriptionTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

### PictureDescriptionFilter

Free text

Basis data type	MaxSize
String	#NULL#

## PictureDescriptionTagFilter

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## RollNumberFilter

If photos are organized into rolls, this can be used to identify them by a number.

Basis data type	MaxSize
String	#NULL#

## RollNameFilter

If photos are organized into rolls, this can be used to identify them by name.

Basis data type	MaxSize
String	#NULL#

## PictureTypeFilter

Type of the picture/photo

Basis data type	Bit #	Code	Description
BitField Size: 2	Bit 0	False	-
		True	Unknown
	Bit 1	False	-
		True	Reserved
	Bit 2	False	-
		True	Photo
	Bit 3	False	-
		True	Drawing
	Bit 4	False	-
		True	Coverart

## PictureTimeFilter

Time the photo was taken. Time is UTC in ms since 1/1/1970.

Basis data type	MaxSize
String	#NULL#

## BoolOp

BoolOp is a meta-tag which indicates how to combine the array elements when filtering. With regards to evaluation, AND takes precedence over OR.

Basis data type	Bit #	Code	Description
Boolean	Bit 0	True	AND
		False	OR

## GlobalTag

Basis data type	Max. Length	Description
Short Stream	255	

## 2.1.22 SelectCurrentMediaListInfo (0x4B3)

Occurrence: Optional

Get audio specific information from a (possibly virtual) audio media information database on the FBlock or on the device represented by the FBlock. The returned list contains a thesaurus of audio specific information of all audio media available. This function behaves the same as SelectMediaListInfo with one difference that it does not use a FilterData argument but rather queries the currently selected tracklist of the external device.

Remarks:

- The record used for the AudioMediaData parameter can be considered as a (non-optimized, redundant) table in a relational database
- If the filter is set and produces duplicate entries, the duplicates must be removed before transfer
- Record elements which are not requested should be empty (string: empty string, numbers: zero)
- It is advised to set the ResultColumns bit for PlayList with caution. Requesting all playLists with all Songs can return a huge number of result records: If a Song is in more than one PlayList, it will be returned once for each PlayList it is in (RIGHT OUTER JOIN operation between playlists and songs).
- If NumberResults is a large value and the FBlock does not have enough memory available to process the request, use ErrorCode 0x20, ErrorInfo 0x02 (List overflow) to indicate that the FBlock is not able to handle this request.

The usage of the transport channel (control/asynchronous) is determined by property AsyncControlSwitch. If set to True then all OPTypes will use the asynchronous channel, if False then the control channel will be used.

### 2.1.22.1 Format of Function

**Function classes:** Unclassified Method

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	SelectCurrent MediaListInfo (0x4B3)	StartResultAck	<a href="#">SenderHandle</a> , <a href="#">Selector</a> , <a href="#">RequestData</a>
		AbortAck	<a href="#">SenderHandle</a>
		ErrorAck	<a href="#">SenderHandle</a> , ErrorCode, ErrorInfo
		ProcessingAck	<a href="#">SenderHandle</a>
		ResultAck	<a href="#">SenderHandle</a> , <a href="#">Selector</a> , <a href="#">ResponseData</a>

### 2.1.22.2 Parameter

#### SenderHandle

Unique handle to identify the request.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

## Selector

Identifies the structure used in ResponseData.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x02	0x00	Start	Start
		0x01	StartTitleTag	StartTitleTag
		0x02	StartGlobalTag	StartGlobalTag

## RequestData

A container for the request data.

Basis data type	Length	Condition	Description
Stream		Selector = 0x00	Content: <a href="#">Start</a> , <a href="#">Offset</a> , <a href="#">NumberResults</a> , <a href="#">ResultColumns</a> , <a href="#">SortOrder1</a> , <a href="#">SortOrder2</a> , <a href="#">SortOrder3</a>
		Selector = 0x01	Content: <a href="#">StartTitleTag</a> , <a href="#">Offset</a> , <a href="#">NumberResults</a> , <a href="#">ResultColumns</a> , <a href="#">SortOrder1</a> , <a href="#">SortOrder2</a> , <a href="#">SortOrder3</a>
		Selector = 0x02	Content: <a href="#">StartGlobalTag</a> , <a href="#">Offset</a> , <a href="#">NumberResults</a> , <a href="#">ResultColumns</a> , <a href="#">SortOrder1</a> , <a href="#">SortOrder2</a> , <a href="#">SortOrder3</a>

## Start

Start (together with Offset and NumberResults) indicates which part of the data is to be returned. The first record/line has a Start value of 1. A Start value greater than TotalNumberResults will result in an empty list.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	none

## Offset

This offset is added/subtracted to the start parameter in order to set the start of the window even if TrackPosition is not known, i.e. Start = 0.

Example:

Start=0

Offset=10

NumberResults=5

This will query in total the meta data of 5 entries which are 10 positions ahead of the current play position.

Start=0

Offset=-10

NumberResults=5

This will query in total the meta data of 5 entries which are starting 10 positions behind of the current play position (-10 ... -5).

This function can be conveniently used to maintain a sliding window of cached metadata around the currently playing track (even if TrackPosition is not known)

Basis data type	Exp.	Range of values	Step	Unit
Signed Long	0		1	none

## NumberResults

NumberResults indicates how many data entries are to be sent. Positive values are advancing forward in the result list, whereas negative values are stepping backwards in the list. This criteria is applied last after applying SortOrder argument.

Sending the special value of zero will return no entries, but will return a ResultAck message containing the TotalNumberResults to be expected for this request.

The number returned in NumberResults may be lower than the requested number, only if there are either fewer results than requested or if the implementation cannot handle the number of requested results.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	none

## ResultColumns

ResultColumns indicates which record elements are of interest to the requester. The value has to be interpreted as an Enum, where each code has a system integrator specific meaning. Therefore 256 different combinations of record elements can be selected.

**Note:** Value 0xFF is predefined and matches the entire set of possible stream parameters.

The system integrator has to define if a specific Enum code selects "Speech mode" or not.

By selecting Speech mode all String fields of MediaData are interpreted as phonetic data instead of the normal string data. Speech mode is optional and the FBlock should return an ErrorCode of 0x07 if speech mode has been requested but has not been implemented in the FBlock.

Related record elements must not be selected separately from each other. Example: When record element CoverArt shall be transferred, record element PictureData must also be selected in order to receive the CoverArt for a certain title.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0		1	none

## SortOrder1

SortOrder1, SortOrder2 and SortOrder3 indicate which record element of MediaData is to be used for ordering the result. The parameters are applied consecutively from 1 to 3 with the rule that a later SortOrder only sorts entries that are equal after the previous application of SortOrder criteria. E.g., first sort by genre and for those titles with equal genres then sort by artist.

Positive numbers for SortOrder[1,2,3] indicate ascending order, negative numbers indicate descending order. The number used is equal to the position of the stream parameter in the stream case that is selected by the current value of ResultColumns. The first stream parameter corresponds to a value of 0x01.

A value of 0x00 will apply default sort order of the device.

Basis data type	Exp.	Range of values	Step	Unit
Signed Word	0		1	none

## SortOrder2

Basis data type	Exp.	Range of values	Step	Unit
Signed Word	0		1	none

## SortOrder3

Basis data type	Exp.	Range of values	Step	Unit
Signed Word	0		1	none

## StartTitleTag

StartTitleTag (together with Offset and NumberResults) indicates which part of the data is to be returned. A Start Tag that is not part of the currently active filter will result in an error.

Basis data type	Max. Length	Description
Short Stream	255	

## StartGlobalTag

StartGlobalTag (together with Offset and NumberResults) indicates which part of the data is to be returned. A Start Tag that is not part of the currently active filter will result in an error.

Basis data type	Max. Length	Description
Short Stream	255	

## ResponseData

A container for the response data.

Basis data type	Length	Condition	Description
Stream		Selector = 0x00	Content: <a href="#">Start</a> , <a href="#">Offset</a> , <a href="#">NumberResults</a> , <a href="#">ResultColumns</a> , <a href="#">SortOrder1</a> , <a href="#">SortOrder2</a> , <a href="#">SortOrder3</a> , <a href="#">TotalNumberResults</a> , <a href="#">MediaData</a>
		Selector = 0x01	Content: <a href="#">StartTitleTag</a> , <a href="#">Offset</a> , <a href="#">NumberResults</a> , <a href="#">ResultColumns</a> , <a href="#">SortOrder1</a> , <a href="#">SortOrder2</a> , <a href="#">SortOrder3</a> , <a href="#">TotalNumberResults</a> , <a href="#">MediaData</a>
		Selector = 0x02	Content: <a href="#">StartGlobalTag</a> , <a href="#">Offset</a> , <a href="#">NumberResults</a> , <a href="#">ResultColumns</a> , <a href="#">SortOrder1</a> , <a href="#">SortOrder2</a> , <a href="#">SortOrder3</a> , <a href="#">TotalNumberResults</a> , <a href="#">MediaData</a>

## TotalNumberResults

The total number of results available which match the selected filter criteria. If the number cannot be determined at the time of the request, use 0xFFFFFFFF.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	none

## MediaData

Due to the multitude of possible stream cases, there is no explicit list of these stream cases. Instead, only the most generic use case listing all possible parameters once within the stream case is shown. Depending on the Value of the Parameter 'ResultColumns', all data field which are **not** requested are left out.

The given parameter sequence order must be kept even when elements are left out.

The reduced parameter set is repeated 'NumberResults' times to accommodate all requested result data.

Basis data type	Length	Condition	Description
Stream		ResultColumns = 0xFF	Content: <a href="#">GlobalTag</a> , <a href="#">Title</a> , <a href="#">TitleTag</a> , <a href="#">Year</a> , <a href="#">Secured</a> , <a href="#">TimesPlayed</a> , <a href="#">Rating</a> , <a href="#">CreationTime</a> , <a href="#">Comment</a> , <a href="#">Filename</a> , <a href="#">FilenameTag</a> , <a href="#">Directory</a> , <a href="#">DirectoryTag</a> , <a href="#">PlaylistName</a> , <a href="#">PlaylistNameTag</a> , <a href="#">FileSize</a> , <a href="#">FileStatus</a> , <a href="#">Artist</a> , <a href="#">ArtistTag</a> , <a href="#">Album</a> , <a href="#">AlbumTag</a> , <a href="#">AlbumArtist</a> , <a href="#">AlbumArtistTag</a> , <a href="#">AudioGenre</a> , <a href="#">AudioGenreTag</a> , <a href="#">Composer</a> , <a href="#">ComposerTag</a> , <a href="#">Grouping</a> , <a href="#">GroupingTag</a> , <a href="#">Opus</a> , <a href="#">OpusTag</a> , <a href="#">Soloist</a> , <a href="#">SoloistTag</a> , <a href="#">Conductor</a> , <a href="#">ConductorTag</a> , <a href="#">Ensemble</a> , <a href="#">EnsembleTag</a> , <a href="#">TrackNumber</a> , <a href="#">TracksInAlbum</a> , <a href="#">PlayTime</a> , <a href="#">AudioType</a> , <a href="#">FileFormatAudio</a> , <a href="#">BitrateAudio</a> , <a href="#">SamplerateAudio</a> , <a href="#">MaxChartPosition</a> , <a href="#">AudioData</a> , <a href="#">VideoGenre</a> , <a href="#">VideoGenreTag</a> , <a href="#">Director</a> , <a href="#">DirectorTag</a> , <a href="#">Writer</a> , <a href="#">WriterTag</a> , <a href="#">Producer</a> , <a href="#">ProducerTag</a> , <a href="#">Distributor</a> , <a href="#">DistributorTag</a> , <a href="#">Country</a> , <a href="#">AudioLanguages</a> , <a href="#">SubtitleLanguages</a> , <a href="#">VideoType</a> , <a href="#">FileFormatVideoContainer</a> , <a href="#">FileFormatVideoCodec</a> , <a href="#">ResolutionWidth</a> , <a href="#">ResolutionHeight</a> , <a href="#">BitrateVideo</a> , <a href="#">FramerateVideo</a> , <a href="#">VideoDescription</a> , <a href="#">VideoDescriptionTag</a> , <a href="#">VideoData</a> , <a href="#">PictureDescription</a> , <a href="#">PictureDescriptionTag</a> , <a href="#">RollNumber</a> , <a href="#">RollName</a> , <a href="#">PictureType</a> , <a href="#">PictureTime</a> , <a href="#">PictureData</a>

## GlobalTag

A global tag which individually identifies each entry of each response. It is possible to create this tag by using a tag type identifier and then appending the type specific tag, e.g., "01" + TitleTag.

Basis data type	Max. Length	Description
Short Stream	255	

## Title

Title of this entry

Basis data type	MaxSize
String	255

## TitleTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	



## Year

Year of publication of this entry.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0	0x0...0xFFFF	1	none

## Secured

Describes whether the entry is DRM protected and which system is used.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x06	0x00	NotSecured	Not Secured
		0x01	UnknownDRM	Unknown DRM
		0x02	WMDRM9	WMDRM9
		0x03	WMRM10	WMRM10
		0x04	WMRM11	WMRM11
		0x05	Fairplay	Fairplay
		0x06	Audible	Audible

## TimesPlayed

Number of times an entry was played.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0	0x0...0xFFFF	1	none

## Rating

Rating of this entry. Higher is better. To map the number to the frequently used 5 star rating, use the following table:

- 0 = not rated
- 1-51 = Rating 1
- 52-102 = Rating 2
- 103-153 = Rating 3
- 154-204 = Rating 4
- 205-255 = Rating 5

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	0...255	1	none

## CreationTime

Date/Time this entry was created (possibly the file creation time). Time is UTC in ms since 1/1/1970.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	ms

## Comment

Comment for this entry.

Basis data type	MaxSize
String	255

## Filename

Name of the file, without directory information.

Basis data type	MaxSize
String	255

## FilenameTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Directory

Directory as a stream.

Basis data type	Length	Condition	Description
Stream		-	Content: <a href="#">Options</a> , <a href="#">SessionID</a> , <a href="#">NumberDirectories</a> , <a href="#">SubDirectory</a>

## Options

The Options parameter indicates how to interpret the directory information. If "Exclude Subdirectories" is set, only the directory itself and possibly the files directly within the directory are considered. If "Exclude Directory itself" is set, then the files within the given directory are ignored. "Relative Directory Access" is used to inform that this directory can be located anywhere in the directory tree and must not start at the root. If SessionID is also given, then the relative directory is considered relative to the directory that was previously defined within the same session. An absolute directory in combination with a SessionID will set the directory within the session to the specified directory. The option indicating whether the first directory string is a Drive can, e.g., be used to beautify the display: with a drive first, typically there is no prepended slash, e.g., C:/subdir/ compared to /rootdir/subdir/. Also see the description for AuxDeviceInfo->DeviceName for a preferred way to name drives.

Basis data type	Bit #	Code	Description
Unsigned Byte	Bit 0	False	Absolute Directory Access
		True	Relative Directory Access
	Bit 1	False	Include Subdirectories
		True	Exclude Subdirectories
	Bit 2	False	Include Directory itself
		True	Exclude Directory itself
	Bit 3	False	The first directory string is a regular subdirectory
		True	The first directory string is a drive, e.g., C:
	Bit 4	False	Return an error, typically 0x20 0x04.
		True	Ignore (i.e. assume an empty directory) problem if the given directory does not

Basis data type	Bit #	Code	Description
			exist.

## SessionID

A Session ID within which the directory can be referenced relative to the previous access.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	none

## NumberDirectories

The number of directory entries following this entry.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	0x0...0xFF	1	none

## SubDirectory

SubDirectory is repeated n times as given in NumberDirectories. This makes the total number of entries within the stream n+3 (Options plus SessionID plus NumberDirectories (=n) plus n SubDirectories).

Basis data type	MaxSize
String	255

## DirectoryTag

Unique identifier.

Basis data type	Length	Min. Length	Condition	Description
Stream	260	5	-	Content: <a href="#">Options</a> , <a href="#">SessionID</a> , <a href="#">NumberDirectories</a> , <a href="#">SubDirectoryTag</a>

## SubDirectoryTag

SubDirectoryTag is repeated n times as given in NumberDirectories. This makes the total number of entries within the stream n+3 (Options plus SessionID plus NumberDirectories (=n) plus n SubDirectoryTags).

Basis data type	Max. Length	Description
Short Stream	255	

## PlaylistName

Name of a Playlist

Basis data type	MaxSize
String	255

## PlaylistNameTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## FileSize

Size of the media title as stored on disk. Unit is bytes.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	none

## FileStatus

The status of the file.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x03	0x00	Unknown	Unknown
		0x01	OK	OK
		0x02	Corrupted	Corrupted
		0x03	DeadLink	Dead Link

## Artist

Name of the Artist

Basis data type	MaxSize
String	255

## ArtistTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Album

Name of the Album

Basis data type	MaxSize
String	255

## AlbumTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## AlbumArtist

Name of the album's artist. It is used, for example, in compilation albums as "Various Artists" or cooperation albums containing tracks of a main artist "featuring" or "with" other artists. The AlbumArtist value then contains the main artist.

Basis data type	MaxSize
String	#NULL#

## AlbumArtistTag

Unique identifier.

Basis data type	MaxSize
String	#NULL#

## AudioGenre

Genre of the audio piece

Basis data type	MaxSize
String	255

## AudioGenreTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Composer

Composer name of the audio piece

Basis data type	MaxSize
String	255

## ComposerTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Grouping

Basis data type	MaxSize
String	255

## GroupingTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Opus

Opus this audio entry belongs to

Basis data type	MaxSize
String	255

## OpusTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Soloist

Soloist(s) who have performed this title

Basis data type	MaxSize
String	255

## SoloistTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Conductor

Conductor who has conducted this title

Basis data type	MaxSize
String	255

## ConductorTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Ensemble

Ensemble which has played this title

Basis data type	MaxSize
String	255

## EnsembleTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## TrackNumber

Track number of the title, e.g., on a CD

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0		1	none

## TracksInAlbum

Number of tracks on the corresponding CD, related to the TrackNumber.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	0x0...0xFF	1	none

## PlayTime

Length of the title in ms.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	ms

## AudioType

Type of the audio.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x04	0x00	Unknown	Unknown
		0x01	NotApplicable	Not Applicable
		0x02	NormalAudio	Normal Audio
		0x03	Audiobook	Audiobook
		0x04	Podcast	Podcast

## FileFormatAudio

Audio Codec

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x16	0x00	Unknown	Unknown
		0x01	CompressedAudio	Compressed Audio

Basis data type	Range of values	Code	Symbolic Name	Description
		0x02	MP3	MP3
		0x03	WMA	WMA
		0x04	AAC	AAC
		0x05	OGGVorbis	OGGVorbis
		0x06	ATRAC	ATRAC
		0x07	MP3Pro	MP3Pro
		0x08	WAV	WAV
		0x09	Real	Real
		0x0A	FLAC	FLAC
		0x0B	Reserved1	Reserved
		0x0C	Reserved2	Reserved
		0x0D	Reserved3	Reserved
		0x0E	Reserved4	Reserved
		0x0F	Reserved5	Reserved
		0x10	AMR	AMR
		0x11	CELP	CELP
		0x12	GSM	GSM
		0x13	iLBC	iLBC
		0x14	MELP	MELP
		0x15	Speex	Speex
		0x16	ITUG711_G729	ITU G.711-G.729

## BitrateAudio

A positive value indicates a constant bitrate (CBR) as given. A negative value indicates a variable bitrate (VBR), averaging at the given bitrate.

Basis data type	Exp.	Range of values	Step	Unit
Signed Word	0	0x0...0xFFFF	1	none

## SamplerateAudio

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	none

## MaxChartPosition

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0		1	none

## AudioData

The actual raw audio data.

Basis data type	Length	Media type
Classified Stream	255	audio/*

## VideoGenre

Genre of the video title

Basis data type	MaxSize
String	255



## VideoGenreTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Director

Name of the director

Basis data type	MaxSize
String	255

## DirectorTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Writer

Name of the Writer/Author

Basis data type	MaxSize
String	255

## WriterTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Producer

Name of the producer

Basis data type	MaxSize
String	255

## ProducerTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Distributor

Name of the distributor

Basis data type	MaxSize
String	255

## DistributorTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## Country

Country in ISO-639-1 coding (two letters). Can contain more than one code, separated by Semicolon.

Basis data type	MaxSize
String	255

## AudioLanguages

List of audio languages in ISO-639-1 notation including the sound format for each language. These are two characters to determine the language; one character to determine the number of normal audio channels (front), one character to determine the number of normal audio channels (side/rear/surround) and one character to determine the number of LFE channels. Each entry is exactly 5 characters long. Entries are separated with semicolon. Example: "en200;en321;de200" means that the following audio streams are available: English, stereo (2.0); English, surround (5.1); German, stereo (2.0). "en000" can be used if the format is not relevant.

Basis data type	MaxSize
String	255

## SubtitleLanguages

List of subtitle languages in ISO-639-1 notation. Entries are separated with semicolon.

Basis data type	MaxSize
String	255

## VideoType

Type of the video.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x05	0x00	Unknown	Unknown
		0x01	NotApplicable	Not Applicable
		0x02	Movie	Movie
		0x03	TVShow	TV Show
		0x04	VideoPodcast	Video Podcast
		0x05	MusicVideo	Music Video

## FileFormatVideoContainer

Container Format of the Video File.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x0C	0x00	Unknown	Unknown
		0x01	MPEG1	MPEG-1
		0x02	MPEG2	MPEG-2
		0x03	MPEG4	MPEG-4
		0x04	3GP	3GP
		0x05	ASF	ASF
		0x06	Reserved	Reserved
		0x07	Matroska	Matroska
		0x08	Quicktime	Quicktime
		0x09	MXF	MXF
		0x0A	Ogg	Ogg
		0x0B	Realmedia	Realmedia
		0x0C	AVI	AVI

## FileFormatVideoCodec

Codec used within the video file.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x0C	0x00	Unknown	Unknown
		0x01	MPEG1	MPEG-1
		0x02	MPEG2	MPEG-2
		0x03	MPEG4	MPEG-4
		0x04	H264	H.264
		0x05	DV	DV
		0x06	Real	Real
		0x07	wmv	wmv
		0x08	ogg	ogg
		0x09	cinepak	cinepak
		0x0A	indeo	indeo
		0x0B	HuffYUV	HuffYUV
		0x0C	DivX	DivX

## ResolutionWidth

Width of the video's resolution

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0	0x0...0xFFFF	1	none

## ResolutionHeight

Height of the video's resolution

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0	0x0...0xFFFF	1	none

## BitrateVideo

A positive value indicates a constant bitrate (CBR) as given. A negative value indicates a variable bitrate (VBR), averaging at the given bitrate.

Basis data type	Exp.	Range of values	Step	Unit
Signed Word	0	0x0...0xFFFF	1	none

## FramerateVideo

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	none

## VideoDescription

Free text

Basis data type	MaxSize
String	255

## VideoDescriptionTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## VideoData

The actual raw video data.

Basis data type	Length	Media type
Classified Stream	255	video/*

## PictureDescription

Free text

Basis data type	MaxSize
String	255

## PictureDescriptionTag

Unique identifier.

Basis data type	Max. Length	Description
Short Stream	255	

## RollNumber

If photos are organized into rolls, this can be used to identify them by a number.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	none

## RollName

If photos are organized into rolls, this can be used to identify them by name.

Basis data type	MaxSize
String	255

## PictureType

Type of the picture/photo

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x04	0x00	Unknown	Unknown
		0x01	NotApplicable	Not Applicable
		0x02	Photo	Photo
		0x03	Drawing	Drawing
		0x04	Coverart	Coverart

## PictureTime

Time in Milliseconds since start of Track or Presentation (for CoverArt or SlideShows).

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Long	0		1	ms

## PictureData

The actual raw picture data.

Basis data type	Length	Media type
Classified Stream	255	image/*

## 2.1.23 AudioStreamNumber (0x500)

Occurrence: Optional

Configuration of the language for audio. E.g., in Disney films it might not be possible to change the language during the playback of the film. In this case, the DVD-C should report general ErrorCode 0x41. For signalization of UOP (user operation prohibition), ErrorCode 0x20 (Function Specific) with ErrorInfo 0x20 (UOP) is used.

### 2.1.23.1 Format of Function

Function classes: Number

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	AudioStream Number (0x500)	Set	<a href="#">AudioStreamNumber</a>
		SetGet	<a href="#">AudioStreamNumber</a>
		Status	<a href="#">AudioStreamNumber</a>
		Error	ErrorCode, ErrorInfo

### 2.1.23.2 Parameter

#### AudioStreamNumber

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0	0x1...0x8	1	none

## 2.1.24 SubtitleStreamNumber (0x502)

Occurrence: Optional

Configuration of the language for the subtitles.

Remark:

\* SubtitleStreamNumber=0: "Subtitle off".

For signalization of UOP (user operation prohibition), ErrorCode 0x20 (Function Specific) with ErrorInfo 0x20 (UOP) is used.

### 2.1.24.1 Format of Function

Function classes: Number

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	SubtitleStream Number (0x502)	Set	<a href="#">SubtitleStreamNumber</a>
		Get	-
		SetGet	<a href="#">SubtitleStreamNumber</a>
		Status	<a href="#">SubtitleStreamNumber</a>
		Error	ErrorCode, ErrorInfo

### 2.1.24.2 Parameter

#### SubtitleStreamNumber

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0	0...32	1	none

## 2.1.25 MenuLanguage (0x504)

Occurrence: Optional

Configuration of the language for the menus.

Remark: \* LanguageCode=0x0000: not used. For signalization of UOP (user operation prohibition), ErrorCode 0x20 (Function Specific) with ErrorInfo 0x20 (UOP) is used.

### 2.1.25.1 Format of Function

Function classes: Number

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	MenuLanguage (0x504)	Set	<a href="#">LanguageCode</a>
		SetGet	<a href="#">LanguageCode</a>
		Status	<a href="#">LanguageCode</a>
		Error	ErrorCode, ErrorInfo

### 2.1.25.2 Parameter

#### LanguageCode

ISO-639-1 "Names of Languages", e.g., 0x6465 = "de" = Germany

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none



## 2.1.26 AvailableMenuLanguages (0x505)

Occurrence: Optional

List of the available languages for the menus. Datatype: Array [1..32] of {LanguageCode}

### 2.1.26.1 Format of Function

**Function classes:** Array of { Number }

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	AvailableMenu Languages (0x505)	Get	<a href="#">Pos</a>
		Status	<a href="#">Pos</a> , <a href="#">Data</a>
		Error	ErrorCode, ErrorInfo

### 2.1.26.2 Parameter

#### Pos

The parameter Pos={x,y} consists of two bytes x and y and shows which parameter shall be set or read. Since this is a unidimensional construct, the second Byte y is unused (y=0=const) and the simplified notation Pos={x} is valid. Valid range: x=0, y=0

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

#### Data

The content of Data depends on parameter Pos={x,y}.

Basis data type	Length	Description	
Array	-	Pos	Data
		{ x=0 }	{LanguageCode[1],...,LanguageCode[NMax]}
		{ x> 0 }	{LanguageCode[x]}

#### LanguageCode

ISO-639-1 "Names of Languages", e.g., 0x6465 = "de" = Germany

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

## 2.1.27 ParentalLevelSystem (0x509)

Occurrence: Optional

Handle the parental level of the DVD player to secure the usage for children.: This property holds the parental level set in the system (Main Unit).

### 2.1.27.1 Format of Function

Function classes: Number

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	ParentalLevel System (0x509)	Set	<a href="#">ParentalLevelSystem</a>
		Get	-
		SetGet	<a href="#">ParentalLevelSystem</a>
		Status	<a href="#">ParentalLevelSystem</a>
		Error	ErrorCode, ErrorInfo

### 2.1.27.2 Parameter

#### ParentalLevelSystem

No Description

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	0x0...0x8	1	none

## 2.1.28 ParentalLevelDVD (0x50A)

Occurrence: Optional

Handle the (temporary) parental level of the DVD player to secure the usage for children: This property holds the parental level of the DVD-Video. For the DVD-V global parental level it is sent if the medium is inserted / activated. For a temporary parental level request it is sent whenever a scene with a parental level shall be played, which is higher than the system parental level.

### 2.1.28.1 Format of Function

**Function classes:** Unclassified Property

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	ParentalLevelDVD (0x50A)	Set	<a href="#">ParentalLevelDVD</a>
		Get	-
		SetGet	<a href="#">ParentalLevelDVD</a>
		Status	<a href="#">ParentalLevelDVD</a>
		Error	ErrorCode, ErrorInfo

### 2.1.28.2 Parameter

#### ParentalLevelDVD

0x00 = No parental management. Any value > 0x00 means that a PML disclaimer must be triggered in the MU with a prompt for the user to change PM level. 0x01 .. 0x08: Level 1 ..8 is required (temp pml)  
0xFF = disc is completely blocked; required disc pml unknown.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	0x0...0xFF	1	none

## 2.1.29 VideoDefaultSettings (0x530)

Occurrence: Optional

Show the Default-Settings of a DVD-Player. Datatype: Record of {AudioLanguage, SubtitleLanguage, MenuLanguage, VideoAngle, VideoFormat}

### 2.1.29.1 Format of Function

**Function classes:** Record of { Number Number Number Enumeration Enumeration }

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	VideoDefault Settings (0x530)	Set	<a href="#">Pos</a> , <a href="#">Data</a>
		Get	<a href="#">Pos</a>
		Status	<a href="#">Pos</a> , <a href="#">Data</a>
		Error	ErrorCode, ErrorInfo

### 2.1.29.2 Parameter

#### Pos

The parameter Pos={x,y} consists of two bytes x and y and shows which parameter shall be set or read. Since this is a unidimensional construct, the second Byte y is unused (y=0=const) and the simplified notation Pos={x} is valid. Valid range: x=0, y=0

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

#### Data

The content of Data depends on parameter Pos={x,y}.

Basis data type	Length	Description	
Record	-	Pos	Data
		{ x==0 }	{AudioLanguage, SubtitleLanguage, MenuLanguage, VideoAngle, VideoFormat}

#### AudioLanguage

ISO-639-1 "Names of Languages", e.g., 0x6465 = "de" = Germany

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

#### SubtitleLanguage

ISO-639-1 "Names of Languages", e.g., 0x6465 = "de" = Germany

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

## MenuLanguage

ISO-639-1 "Names of Languages", e.g., 0x6465 = "de" = Germany

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

## VideoAngle

Angle

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x01...0x09	0x01	Angle1	Angle 1
		0x02	Angle2	Angle 2
		0x03	Angle3	Angle 3
		0x04	Angle4	Angle 4
		0x05	Angle5	Angle 5
		0x06	Angle6	Angle 6
		0x07	Angle7	Angle 7
		0x08	Angle8	Angle 8
		0x09	Angle9	Angle 9

## VideoFormat

Enumeration of the available video appearance settings.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x08	0x00	unknown	unknown
		0x01	Standard4_3	Standard 4:3
		0x02	Standard16_9	Wide 16:9
		0x03	Letterbox	Letter box
		0x04	PanSCAN	Pan SCAN
		0x05	Cinemascope	Cinemascope
		0x06	reserved1	reserved
		0x07	reserved2	reserved
		0x08	reserved3	reserved

## 2.1.30 VideoAngle (0x531)

Occurrence: Optional

Angle for Video. For signalization of UOP (user operation prohibition), ErrorCode 0x20 (Function Specific) with ErrorInfo 0x20 (UOP) is used.

### 2.1.30.1 Format of Function

**Function classes:** Unclassified Property

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	VideoAngle (0x531)	Set	<a href="#">VideoAngle</a>
		Get	-
		SetGet	<a href="#">VideoAngle</a>
		Status	<a href="#">VideoAngle</a>
		Error	ErrorCode, ErrorInfo

### 2.1.30.2 Parameter

#### VideoAngle

Angle

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x01...0x09	0x01	Angle1	Angle 1
		0x02	Angle2	Angle 2
		0x03	Angle3	Angle 3
		0x04	Angle4	Angle 4
		0x05	Angle5	Angle 5
		0x06	Angle6	Angle 6
		0x07	Angle7	Angle 7
		0x08	Angle8	Angle 8
		0x09	Angle9	Angle 9

## 2.1.31 CountryCode (0x584)

Occurrence: Optional

Country code for video player. It is used in combination with Parental Level setting. For matching the parental management level it has to be ensured that the same kind of branch table as the internal DVD player has implemented is being used.

### 2.1.31.1 Format of Function

Function classes: Number

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	CountryCode (0x584)	Set	<a href="#">CountryCode</a>
		SetGet	<a href="#">CountryCode</a>
		Status	<a href="#">CountryCode</a>
		Error	ErrorCode, ErrorInfo

### 2.1.31.2 Parameter

#### CountryCode

The country code consists of 4 digits.

Calculation formula for the country code =  $1070 + 30a + b$

a = Alpha code with [A=1, B=2, C=3, ..., Z=26]

b = Alpha code with [A=1, B=2, C=3, ..., Z=26]

e.g., German, Alpha2 code = DE

=> With a=4 ( as D=4) and b=5 (as E=5) country code =  $1070 + 30 \times 4 + 5 = 1195$

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

## 2.1.32 AudioStreamProperties (0x614)

Occurrence: Optional

This property reports the audio stream properties of all currently available audio streams

### 2.1.32.1 Format of Function

**Function classes:** Array of { Record of { Enumeration BitField Enumeration Enumeration Enumeration Enumeration Enumeration Number Enumeration } }

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	AudioStream Properties (0x614)	Get	<a href="#">Pos</a>
		Status	<a href="#">Pos</a> , <a href="#">Data</a>
		Error	ErrorCode, ErrorInfo

### 2.1.32.2 Parameter

#### Pos

The parameter Pos={x,y} consists of two bytes x and y and shows which parameter shall be set or read. Since this is a unidimensional construct, the second Byte y is unused (y=0=const) and the simplified notation Pos={x} is valid. x = 0..9

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

#### Data

No Description

Basis data type	Length	Description	
Array	-	Pos	Data
		{ x=0, y=0 }	{AudioCodingMode[1], MultichannelExtension[1], AudioType[1], AudioApplicationMode[1], Quantization[1], fs[1], NumberAudioChannels[1], LanguageCode[1], LanguageCodeExtensionAudio[1],...,AudioCodingMode[NMax], MultichannelExtension[NMax], AudioType[NMax], AudioApplicationMode[NMax], Quantization[NMax], fs[NMax], NumberAudioChannels[NMax], LanguageCode[NMax], LanguageCodeExtensionAudio[NMax]}
		{ x>0, y=0 }	{AudioCodingMode[x], MultichannelExtension[x], AudioType[x], AudioApplicationMode[x], Quantization[x], fs[x], NumberAudioChannels[x], LanguageCode[x], LanguageCodeExtensionAudio[x]}



## AudioCodingMode

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x08	0x00	DolbyAC3	Dolby AC-3
		0x01	reserved1	reserved
		0x02	MPEG1_Or_MPEG2With outExtension	MPEG-1 or MPEG-2 without extension bitstream
		0x03	MPEG2WithExtension	MPEG-2 with extension bitstream
		0x04	LinearPCM	Linear PCM
		0x05	reserved2	reserved
		0x06	DTS	DTS
		0x07	reserved3	reserved (was SDDS)
		0x08	MLP	MLP (MeridianLosslessPacki ng)

## MultichannelExtension

Basis data type	Bit #	Code	Description
BitField Size: 2	Bit 0	False	Relevant VTS_MU_AST_ATR is not effective (no multichannel)
		True	Linked to the relevant VTS_MU_AST_ATR (multichannel)
	Bit 1 ... 7	-	Reserved

## AudioType

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x03	0x00	NotSpecified	Not specified
		0x01	LanguageInclude	Language include
		0x02	reserved1	reserved
		0x03	reserved2	reserved

## AudioApplicationMode

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x03	0x00	NotSpecified	Not specified
		0x01	Reserved_was_Karaoke Mode	Reserved (was KaraokeMode)
		0x02	SurroundMode	SurroundMode
		0x03	reserved	reserved

## Quantization

If AudioCodingMode= {Dolby AC-3, DTS or SDDS} then enter 0x03 (reserved) If AudioCodingMode= {MPEG-1 (0x02), MPEG-2 (0x03) or {PCM (0x04)} then following description applies:

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x03	0x00	PCM16Bits	MPEG-1,-2: dynamic range control data does not exist in MPEG audio stream. PCM: 16 bits
		0x01	PCM20Bits	MPEG-1,-2: dynamic range control data exists in MPEG audio stream. PCM: 20 bits

Basis data type	Range of values	Code	Symbolic Name	Description
		0x02	PCM24Bits	MPEG-1,-2: reserved. PCM: 24 bits
		0x03	reserved	MPEG-1,-2: reserved. PCM: reserved

## fs

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x03	0x00	48kHz	48 kHz
		0x01	96kHz	96 kHz
		0x02	reserved1	reserved
		0x03	reserved2	reserved

## NumberAudioChannels

The "0.1 ch" is defined as "1 ch" (in case of 5.1, enter 0x05)

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0xFF	0x00	1ch_mono	1 ch (mono)
		0x01	2ch_mono	2 ch (mono)
		0x02	3ch_multi	3 ch (multichannel) (2.1)
		0x03	4ch_multi	4 ch (multichannel)
		0x04	5ch_multi	5 ch (multichannel)
		0x05	6ch_multi	6 ch (multichannel) (5.1)
		0x06	7ch_multi	7 ch (multichannel)
		0x07	8ch_multi	8 ch (multichannel) (7.1)
		0xFF	unknown	unknown

## LanguageCode

ISO-639-1 "Names of Languages", e.g., 0x6465 = "de" = Germany

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

## LanguageCodeExtensionAudio

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00.... 0xFF	0x00	NotSpecified	Not specified
		0x01	NormalCaption	NormalCaption
		0x02	VisuallyImpaired	Audio for visually impaired
		0x03	DirectorsComments1	Director's comments 1
		0x04	DirectorsComments2	Director's comments 2
		0x05 ... 0x7F		Reserved
		0x80 ... 0xFF		Provider defined

## 2.1.33 MultiChannel (0x616)

Occurrence: Optional

This function describes each Audio Attribute for multichannel use of the currently selected stream. The content of these properties is coded in 24 Bytes. Please refer to DVD specification Part 3, Video Title Set Information, Anex D and Anex E.

### 2.1.33.1 Format of Function

**Function classes:** Array of { Number }

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	MultiChannel (0x616)	Get	<a href="#">Pos</a>
		Status	<a href="#">Pos</a> , <a href="#">Data</a>
		Error	ErrorCode, ErrorInfo

### 2.1.33.2 Parameter

#### Pos

The parameter Pos={x,y} consists of two bytes x and y and shows which parameter shall be set or read. Since this is a unidimensional construct, the second Byte y is unused (y=0=const) and the simplified notation Pos={x} is valid. x = 0...24.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

#### Data

The content of Data depends on parameter Pos={x}.

Basis data type	Length	Description	
Array	-	Pos	Data
		{ x=0 }	{Byte[1],...,Byte[NMax]}
		{ x> 0 }	{Byte[x]}

#### Byte

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0		1	none

## 2.1.34 SubpixStreamProperties (0x618)

Occurrence: Optional

This function reports the subpicture stream properties of all currently available subpicture streams. Please refer to DVD specification Part 3, Video Title Set Information, Anex C.

### 2.1.34.1 Format of Function

**Function classes:** Array of { Record of { Enumeration Enumeration Number Enumeration } }

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	SubpixStream Properties (0x618)	Get	<a href="#">Pos</a>
		Status	<a href="#">Pos</a> , <a href="#">Data</a>
		Error	ErrorCode, ErrorInfo

### 2.1.34.2 Parameter

#### Pos

The parameter Pos={x,y} consists of two bytes x and y and shows which parameter shall be set or read. x = 0...NMax.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

#### Data

The content of Data depends on parameter Pos={x}.

Basis data type	Length	Description	
Array	-	Pos	Data
		{ x=0, y=0 }	{SubpixCodingMode[1], SubpixType[1], LanguageCode[1], LanguageCodeExtensionSubpix[1],...,Subpix CodingMode[NMax], SubpixType[NMax], LanguageCode[NMax], LanguageCodeExtensionSubpix[NMax]}
		{ x>0, y=0 }	{SubpixCodingMode[x], SubpixType[x], LanguageCode[x], LanguageCodeExtensionSubpix[x]}

### SubpixCodingMode

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00.... 0x07	0x00	RunLength	Run-length
		0x01	Reserved	Reserved (for extended subpicture)
		0x02 ... 0x07		Reserved

## SubpixType

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x03	0x00	NotSpecified	Not specified
		0x01	Language	Language
		0x02	reserved1	reserved
		0x03	reserved2	reserved

## LanguageCode

ISO-639-1 "Names of Languages", e.g., 0x6465 = "de" = Germany

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

## LanguageCodeExtensionSubpix

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00.... 0xFF	0x00	NotSpecified	Not specified
		0x01	CaptionNormalSize	CaptionNormalSize
		0x02	CaptionBiggerSize	CaptionBiggerSize
		0x03	CaptionForChildren	CaptionForChildren
		0x04	Reserved	Reserved
		0x05	ClosedCaptionNormalSize	ClosedCaptionNormalSize
		0x06	ClosedCaptionBiggerSize	ClosedCaptionBiggerSize
		0x07	ClosedCaptionForChildren	ClosedCaptionForChildren
		0x08	Reserved1	Reserved
		0x09	ForcedCaption	ForcedCaption
		0x0A	Reserved2	Reserved
		0x0B	Reserved3	Reserved
		0x0C	Reserved4	Reserved
		0x0D	DirectorCommentNormalSize	Director'sCommentNormalSize
		0x0E	DirectorCommentBiggerSize	Director'sCommentBiggerSize
		0x0F	DirectorCommentForChildren	Director'sCommentForChildren
		0x10 ... 0xFF		Reserved

## 2.1.35 Shuffle (0x620)

Occurrence: Optional

This property is for switching on and off the shuffle function. It is similar to the Random function except that shuffle assures that no title is repeated until all titles have been played. Shuffle is not possible on media type VideoCD, DVD-Video and should report an Error (0x41: Not available).

Note:

Disc => Random selection with the current disc.

Magazine => Random selection with the current magazine.

All Magazine => Random selection with all magazines.

This function should return an error if Random function is selected and vice versa.

### 2.1.35.1 Format of Function

Function classes: Unclassified Property

FBlock	Function	OPType	Parameter
DVDVideoPlayer (0x34)	Shuffle (0x620)	Set	<a href="#">ShuffleState</a>
		SetGet	<a href="#">ShuffleState</a>
		Status	<a href="#">ShuffleState</a>
		Error	ErrorCode, ErrorInfo

### 2.1.35.2 Parameter

#### ShuffleState

Depending on the player only a subset is available:

- \* AudiDiskPlayer (SinglePlayer): 0x00, 0x02
- \* AudioDiskPlayer (Changer): 0x00, 0x02, 0x03
- \* MultiMediaPlayer: 0x00, 0x02, 0x03

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x0C	0x00	Off	Off
		0x01	Reserved1	reserved
		0x02	Disc	Disc
		0x03	Magazine	Magazine (only drive with magazine)
		0x04	Reserved2	Reserved (All magazines (only drive with several magazines))
		0x05 ... 0x09		Reserved
		0x0A	Folder	Folder
		0x0B	Subfolder	Subfolder
		0x0C	Tracklist	Tracklist

Notes: