
**Information technology — UPnP
Device Architecture —**

**Part 20-10:
Audio video device control
protocol — Level 4 — Audio video
transport service**

*Technologies de l'information — Architecture de dispositif UPnP —
Partie 20-10: Protocole de contrôle de dispositif audio-vidéo —
Niveau 4 — Service de transport audio-vidéo*



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CONTENTS

1	Scope	1
2	Normative references	1
3	Terms, definitions, symbols and abbreviations	4
3.1	Provisioning terms	4
3.2	Symbols	5
4	Notations and Conventions	5
4.1	Notation	5
4.1.1	Data Types	5
4.1.2	Strings Embedded in Other Strings	5
4.1.3	Extended Backus-Naur Form	6
4.2	Derived Data Types	6
4.2.1	Summary	6
4.2.2	CSV Lists	6
4.3	Management of XML Namespaces in Standardized DCPs	8
4.3.1	Namespace Prefix Requirements	12
4.3.2	Namespace Names, Namespace Versioning and Schema Versioning	13
4.3.3	Namespace Usage Examples	15
4.4	Vendor-defined Extensions	15
4.4.1	Vendor-defined Action Names	15
4.4.2	Vendor-defined State Variable Names	15
4.4.3	Vendor-defined XML Elements and attributes	16
4.4.4	Vendor-defined Property Names	16
5	Service Modeling Definitions	16
5.1	ServiceType	16
5.2	State Variables	16
5.2.1	State Variable Overview	16
5.2.2	<u>TransportState</u>	18
5.2.3	<u>TransportStatus</u>	19
5.2.4	<u>CurrentMediaCategory</u>	19
5.2.5	<u>PlaybackStorageMedium</u>	19
5.2.6	<u>RecordStorageMedium</u>	21
5.2.7	<u>PossiblePlaybackStorageMedia</u>	21
5.2.8	<u>PossibleRecordStorageMedia</u>	21
5.2.9	<u>CurrentPlayMode</u>	21
5.2.10	<u>TransportPlaySpeed</u>	21
5.2.11	<u>RecordMediumWriteStatus</u>	21
5.2.12	<u>CurrentRecordQualityMode</u>	22
5.2.13	<u>PossibleRecordQualityModes</u>	22
5.2.14	<u>NumberOfTracks</u>	22
5.2.15	<u>CurrentTrack</u>	23
5.2.16	<u>CurrentTrackDuration</u>	23
5.2.17	<u>CurrentMediaDuration</u>	23
5.2.18	<u>CurrentTrackMetaData</u>	24
5.2.19	<u>CurrentTrackURI</u>	24
5.2.20	<u>AVTransportURI</u>	24

5.2.21	<u>AVTransportURIMetaData</u>	24
5.2.22	<u>NextAVTransportURI</u>	24
5.2.23	<u>NextAVTransportURIMetaData</u>	24
5.2.24	<u>RelativeTimePosition</u>	25
5.2.25	<u>AbsoluteTimePosition</u>	25
5.2.26	<u>RelativeCounterPosition</u>	25
5.2.27	<u>AbsoluteCounterPosition</u>	25
5.2.28	<u>CurrentTransportActions</u>	26
5.2.29	<u>LastChange</u>	26
5.2.30	<u>DRMState</u>	26
5.2.31	<u>SyncOffset</u>	27
5.2.32	<u>A ARG TYPE SeekMode</u>	28
5.2.33	<u>A ARG TYPE SeekTarget</u>	28
5.2.34	<u>A ARG TYPE InstanceID</u>	29
5.2.35	<u>A ARG TYPE DeviceUDN</u>	29
5.2.36	<u>A ARG TYPE ServiceType</u>	29
5.2.37	<u>A ARG TYPE ServiceID</u>	29
5.2.38	<u>A ARG TYPE StateVariableValuePairs</u>	29
5.2.39	<u>A ARG TYPE StateVariableList</u>	30
5.2.40	<u>A ARG TYPE PlaylistData</u>	30
5.2.41	<u>A ARG TYPE PlaylistDataLength</u>	30
5.2.42	<u>A ARG TYPE PlaylistOffset</u>	30
5.2.43	<u>A ARG TYPE PlaylistTotalLength</u>	30
5.2.44	<u>A ARG TYPE PlaylistMIMEType</u>	31
5.2.45	<u>A ARG TYPE PlaylistExtendedType</u>	31
5.2.46	<u>A ARG TYPE PlaylistStep</u>	31
5.2.47	<u>A ARG TYPE PlaylistType</u>	31
5.2.48	<u>A ARG TYPE PlaylistInfo</u>	32
5.2.49	<u>A ARG TYPE PlaylistStartObjID</u>	35
5.2.50	<u>A ARG TYPE PlaylistStartGroupID</u>	35
5.2.51	<u>A ARG TYPE SyncOffsetAdj</u>	35
5.2.52	<u>A ARG TYPE PresentationTime</u>	36
5.2.53	<u>A ARG TYPE ClockID</u>	36
5.3	Eventing and Moderation	36
5.3.1	Eventing and Moderation Overview	36
5.3.2	Event Model	38
5.4	Actions	39
5.4.1	Action Overview	39
5.4.2	<u>SetAVTransportURI()</u>	41
5.4.3	<u>SetNextAVTransportURI()</u>	42
5.4.4	<u>GetMediaInfo()</u>	44
5.4.5	<u>GetMediaInfo Ext()</u>	45
5.4.6	<u>GetTransportInfo()</u>	45
5.4.7	<u>GetPositionInfo()</u>	46
5.4.8	<u>GetDeviceCapabilities()</u>	47
5.4.9	<u>GetTransportSettings()</u>	47
5.4.10	<u>Stop()</u>	48
5.4.11	<u>Play()</u>	49
5.4.12	<u>Pause()</u>	50

5.4.13	<u>Record()</u>	51
5.4.14	<u>Seek()</u>	52
5.4.15	<u>Next()</u>	54
5.4.16	<u>Previous()</u>	55
5.4.17	<u>SetPlayMode()</u>	56
5.4.18	<u>SetRecordQualityMode()</u>	57
5.4.19	<u>GetCurrentTransportActions()</u>	57
5.4.20	<u>GetDRMState()</u>	58
5.4.21	<u>GetStateVariables()</u>	58
5.4.22	<u>SetStateVariables()</u>	59
5.4.23	<u>GetSyncOffset()</u>	60
5.4.24	<u>SetSyncOffset()</u>	61
5.4.25	<u>AdjustSyncOffset()</u>	61
5.4.26	<u>SyncPlay()</u>	62
5.4.27	<u>SyncStop()</u>	64
5.4.28	<u>SyncPause()</u>	65
5.4.29	<u>SetStaticPlaylist()</u>	66
5.4.30	<u>SetStreamingPlaylist()</u>	68
5.4.31	<u>GetPlaylistInfo()</u>	69
5.4.32	Common Error Codes	70
6	XML Service Description	72
7	Test	92
Annex A (normative)	<u>SetAVTransportURI()</u> Protocol Specifics	93
A.1	Application to HTTP Streaming	93
A.1.1	<u>AVTransportURI</u> Definition	93
A.1.2	Control Point Behavior for <u>SetAVTransportURI()</u>	93
A.1.3	Implementation of <u>SetAVTransportURI()</u>	93
A.1.4	Cleanup	93
A.2	Application to RTSP/RTP/UDP Streaming	93
A.2.1	<u>AVTransportURI</u> Definition	93
A.2.2	Control Point behavior for <u>SetAVTransportURI()</u>	93
A.2.3	Implementation of <u>SetAVTransportURI()</u>	94
A.2.4	Cleanup	94
A.2.5	Implementation of Transport Controls	94
A.3	Application to Internal Streaming	95
A.3.1	<u>AVTransportURI</u> Definition	95
A.3.2	Implementation of <u>SetAVTransportURI()</u>	95
A.3.3	Cleanup	95
A.4	Application to IEC61883 Streaming	95
A.4.1	<u>AVTransportURI</u> Definition	95
A.4.2	Implementation of <u>SetAVTransportURI()</u>	95
A.4.3	Cleanup	95
A.5	Application to Vendor-specific Streaming	95
A.5.1	<u>AVTransportURI</u> Definition	95
A.5.2	Implementation of <u>SetAVTransportURI()</u>	96
A.5.3	Cleanup	96
Annex B (informative)	Theory of Operation	97
B.1	TransportState Control	97

ISO/IEC 29341-20-10:2017(E)

B.2	Transport Settings	98
B.3	Navigation	98
B.4	AVTransportURI Concept.....	98
B.5	AVTransport Abstraction	99
B.6	Supporting Multiple Virtual Transports.....	101
B.7	Playlist Playback	102
B.8	Dynamic Playlists	103
B.8.1	Playlist Updating	103
B.8.2	Determining Playlist Rendering Capabilities.....	103
B.8.3	Submitting a Streaming Playlist	104
B.8.4	Modifying a Current Playlist.....	105
B.8.5	Submitting a Static Playlist	106
B.8.6	Retrieving a Current Static Playlist	107
B.9	<i>CLOCKSYNC feature</i> : Synchronized Playback	108
B.9.2	Example of <i>SyncOffset</i> State Variable	109
B.9.3	Example Scenarios for <i>SyncPlay()</i> Action	109
Annex C (informative) Bibliography		113

List of Tables

Table 1 — EBNF Operators.....	6
Table 2 — CSV Examples.....	7
Table 3 — Namespace Definitions.....	9
Table 4 — Schema-related Information.....	11
Table 5 — Default Namespaces for the AV Specifications.....	13
Table 6 — State Variables	17
Table 7 — allowedValueList for <u>TransportState</u>	19
Table 8 — allowedValueRange for <u>TransportStatus</u>	19
Table 9 — allowedValueList for <u>CurrentMediaCategory</u>	19
Table 10 — allowedValueList for <u>PlaybackStorageMedium</u>	20
Table 11 — allowedValueList for <u>CurrentPlayMode</u>	21
Table 12 — allowedValueList for <u>RecordMediumWriteStatus</u>	22
Table 13 — allowedValueList for <u>CurrentRecordQualityMode</u>	22
Table 14 — allowedValueRange for <u>NumberOfTracks</u>	23
Table 15 — allowedValueRange for <u>CurrentTrack</u>	23
Table 16 — allowedValueList for <u>CurrentTransportActions</u>	26
Table 17 — allowedValueList for <u>DRMState</u>	27
Table 18 — allowedValueRange for <u>SyncOffset</u>	28
Table 19 — allowedValueList for <u>A_ARG_TYPE SeekMode</u>	28
Table 20 — Format of <u>A_ARG_TYPE SeekTarget</u>	29
Table 21 — allowedValueList for <u>A_ARG_TYPE PlaylistStep</u>	31
Table 22 — allowedValueList for <u>A_ARG_TYPE PlaylistType</u>	31
Table 23 — Event Moderation	36
Table 24 — Actions.....	39
Table 25 — Arguments for <u>SetAVTransportURI()</u>	41
Table 26 — Error Codes for <u>SetAVTransportURI()</u>	42
Table 27 — Arguments for <u>SetNextAVTransportURI()</u>	43
Table 28 — Error Codes for <u>SetNextAVTransportURI()</u>	44
Table 29 — Arguments for <u>GetMediaInfo()</u>	44
Table 30 — Error Codes for <u>GetMediaInfo()</u>	45
Table 31 — Arguments for <u>GetMediaInfo_Ext()</u>	45
Table 32 — Error Codes for <u>GetMediaInfo_Ext()</u>	45
Table 33 — Arguments for <u>GetTransportInfo()</u>	46
Table 34 — Error Codes for <u>GetTransportInfo()</u>	46
Table 35 — Arguments for <u>GetPositionInfo()</u>	46
Table 36 — Error Codes for <u>GetPositionInfo()</u>	47
Table 37 — Arguments for <u>GetDeviceCapabilities()</u>	47
Table 38 — Error Codes for <u>GetDeviceCapabilities()</u>	47
Table 39 — Arguments for <u>GetTransportSettings()</u>	47
Table 40 — Error Codes for <u>GetTransportSettings()</u>	48
Table 41 — Arguments for <u>Stop()</u>	48

ISO/IEC 29341-20-10:2017(E)

Table 42 — Error Codes for <u>Stop()</u>	49
Table 43 — Arguments for <u>Play()</u>	49
Table 44 — Error Codes for <u>Play()</u>	50
Table 45 — Arguments for <u>Pause()</u>	51
Table 46 — Error Codes for <u>Pause()</u>	51
Table 47 — Arguments for <u>Record()</u>	51
Table 48 — Error Codes for <u>Record()</u>	52
Table 49 — Arguments for <u>Seek()</u>	53
Table 50 — Error Codes for <u>Seek()</u>	54
Table 51 — Arguments for <u>Next()</u>	54
Table 52 — Error Codes for <u>Next()</u>	55
Table 53 — Arguments for <u>Previous()</u>	55
Table 54 — Error Codes for <u>Previous()</u>	56
Table 55 — Arguments for <u>SetPlayMode()</u>	56
Table 56 — Error Codes for <u>SetPlayMode()</u>	57
Table 57 — Arguments for <u>SetRecordQualityMode()</u>	57
Table 58 — Error Codes for <u>SetRecordQualityMode()</u>	57
Table 59 — Arguments for <u>GetCurrentTransportActions()</u>	58
Table 60 — Error Codes for <u>GetCurrentTransportActions()</u>	58
Table 61 — Arguments for <u>GetDRMState()</u>	58
Table 62 — Error Codes for <u>GetDRMState()</u>	58
Table 63 — Arguments for <u>GetStateVariables()</u>	59
Table 64 — Error Codes for <u>GetStateVariables()</u>	59
Table 65 — Arguments for <u>SetStateVariables()</u>	60
Table 66 — Error Codes for <u>SetStateVariables()</u>	60
Table 67 — Arguments for <u>GetSyncOffset()</u>	60
Table 68 — Error Codes for <u>GetSyncOffset()</u>	61
Table 69 — Arguments for <u>SetSyncOffset()</u>	61
Table 70 — Error Codes for <u>SetSyncOffset()</u>	61
Table 71 — Arguments for <u>AdjustSyncOffset()</u>	62
Table 72 — Error Codes for <u>AdjustSyncOffset()</u>	62
Table 73 — Arguments for <u>SyncPlay()</u>	63
Table 74 — Error Codes for <u>SyncPlay()</u>	64
Table 75 — Arguments for <u>SyncStop()</u>	65
Table 76 — Error Codes for <u>SyncStop()</u>	65
Table 77 — Arguments for <u>SyncPause()</u>	66
Table 78 — Error Codes for <u>SyncPause()</u>	66
Table 79 — Arguments for <u>SetStaticPlaylist()</u>	67
Table 80 — Error Codes for <u>SetStaticPlaylist()</u>	68
Table 81 — Arguments for <u>SetStreamingPlaylist()</u>	68
Table 82 — Error Codes for <u>SetStreamingPlaylist()</u>	69
Table 83 — Arguments for <u>GetPlaylistInfo()</u>	69
Table 84 — Error Codes for <u>GetPlaylistInfo()</u>	70

Table 85 — Common Error Codes	71
Table B.1 — Allowed AVTransportURIs	99
Table B.2 — Example mappings of resources type to track sequences	100
Table B.3 — Example seek modes, play modes and transport actions, per resource type	101

List of Figures

Figure B.1 — <u>TransportState</u> Transitions - INFORMATIVE	97
Figure B.2 — <u>SyncPlay()</u> with past presentation time	110
Figure B.3 — <u>SyncPlay()</u> with future presentation time	111
Figure B.4 — <u>SyncPlay()</u> with future presentation time and reference positioning	112

Foreword

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ISO/IEC 29341-20-10 was prepared by UPnP Forum and adopted, under the PAS procedure, by joint technical committee ISO/IEC JTC 1, *Information technology*, in parallel with its approval by national bodies of ISO and IEC.

The list of all currently available parts of ISO/IEC 29341 series, under the general title *Information technology — UPnP Device Architecture*, can be found on the [ISO web site](#).

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Original UPnP Document

Reference may be made in this document to original UPnP documents. These references are retained in order to maintain consistency between the specifications as published by ISO/IEC and by UPnP Implementers Corporation and later by UPnP Forum. The following table indicates the original UPnP document titles and the corresponding part of ISO/IEC 29341:

UPnP Document Title	ISO/IEC 29341 Part
UPnP Device Architecture 1.0	ISO/IEC 29341-1:2008
UPnP Device Architecture Version 1.0	ISO/IEC 29341-1:2011
UPnP Device Architecture 1.1	ISO/IEC 29341-1-1:2011
UPnP Device Architecture 2.0	ISO/IEC 29341-1-2
UPnP Basic:1 Device	ISO/IEC 29341-2
UPnP AV Architecture:1	ISO/IEC 29341-3-1:2008
UPnP AV Architecture:1	ISO/IEC 29341-3-1:2011
UPnP AVTransport:1 Service	ISO/IEC 29341-3-10
UPnP ConnectionManager:1 Service	ISO/IEC 29341-3-11
UPnP ContentDirectory:1 Service	ISO/IEC 29341-3-12
UPnP RenderingControl:1 Service	ISO/IEC 29341-3-13
UPnP MediaRenderer:1 Device	ISO/IEC 29341-3-2
UPnP MediaRenderer:2 Device	ISO/IEC 29341-3-2:2011
UPnP MediaServer:1 Device	ISO/IEC 29341-3-3
UPnP AVTransport:2 Service	ISO/IEC 29341-4-10:2008
UPnP AVTransport:2 Service	ISO/IEC 29341-4-10:2011
UPnP ConnectionManager:2 Service	ISO/IEC 29341-4-11:2008
UPnP ConnectionManager:2 Service	ISO/IEC 29341-4-11:2011
UPnP ContentDirectory:2 Service	ISO/IEC 29341-4-12
UPnP RenderingControl:2 Service	ISO/IEC 29341-4-13:2008
UPnP RenderingControl:2 Service	ISO/IEC 29341-4-13:2011
UPnP ScheduledRecording:1	ISO/IEC 29341-4-14
UPnP ScheduledRecording:2	ISO/IEC 29341-4-14:2011
UPnP MediaRenderer:2 Device	ISO/IEC 29341-4-2
UPnP MediaServer:2 Device	ISO/IEC 29341-4-3
UPnP AV Datastructure Template:1	ISO/IEC 29341-4-4:2008
UPnP AV Datastructure Template:1	ISO/IEC 29341-4-4:2011
UPnP DigitalSecurityCamera:1 Device	ISO/IEC 29341-5-1
UPnP DigitalSecurityCameraMotionImage:1 Service	ISO/IEC 29341-5-10
UPnP DigitalSecurityCameraSettings:1 Service	ISO/IEC 29341-5-11
UPnP DigitalSecurityCameraStillImage:1 Service	ISO/IEC 29341-5-12
UPnP HVAC_System:1 Device	ISO/IEC 29341-6-1
UPnP ControlValve:1 Service	ISO/IEC 29341-6-10
UPnP HVAC_FanOperatingMode:1 Service	ISO/IEC 29341-6-11
UPnP FanSpeed:1 Service	ISO/IEC 29341-6-12
UPnP HouseStatus:1 Service	ISO/IEC 29341-6-13
UPnP HVAC_SetpointSchedule:1 Service	ISO/IEC 29341-6-14
UPnP TemperatureSensor:1 Service	ISO/IEC 29341-6-15
UPnP TemperatureSetpoint:1 Service	ISO/IEC 29341-6-16
UPnP HVAC_UserOperatingMode:1 Service	ISO/IEC 29341-6-17
UPnP HVAC_ZoneThermostat:1 Device	ISO/IEC 29341-6-2

ISO/IEC 29341-20-10:2017(E)

UPnP BinaryLight:1 Device	ISO/IEC 29341-7-1
UPnP Dimming:1 Service	ISO/IEC 29341-7-10
UPnP SwitchPower:1 Service	ISO/IEC 29341-7-11
UPnP DimmableLight:1 Device	ISO/IEC 29341-7-2
UPnP InternetGatewayDevice:1 Device	ISO/IEC 29341-8-1
UPnP LANHostConfigManagement:1 Service	ISO/IEC 29341-8-10
UPnP Layer3Forwarding:1 Service	ISO/IEC 29341-8-11
UPnP LinkAuthentication:1 Service	ISO/IEC 29341-8-12
UPnP RadiusClient:1 Service	ISO/IEC 29341-8-13
UPnP WANCableLinkConfig:1 Service	ISO/IEC 29341-8-14
UPnP WANCommonInterfaceConfig:1 Service	ISO/IEC 29341-8-15
UPnP WANDSLLinkConfig:1 Service	ISO/IEC 29341-8-16
UPnP WANEthernetLinkConfig:1 Service	ISO/IEC 29341-8-17
UPnP WANIPConnection:1 Service	ISO/IEC 29341-8-18
UPnP WANPOTSLinkConfig:1 Service	ISO/IEC 29341-8-19
UPnP LANDevice:1 Device	ISO/IEC 29341-8-2
UPnP WANPPPConnection:1 Service	ISO/IEC 29341-8-20
UPnP WLANConfiguration:1 Service	ISO/IEC 29341-8-21
UPnP WANDevice:1 Device	ISO/IEC 29341-8-3
UPnP WANConnectionDevice:1 Device	ISO/IEC 29341-8-4
UPnP WLANAccessPointDevice:1 Device	ISO/IEC 29341-8-5
UPnP Printer:1 Device	ISO/IEC 29341-9-1
UPnP ExternalActivity:1 Service	ISO/IEC 29341-9-10
UPnP Feeder:1.0 Service	ISO/IEC 29341-9-11
UPnP PrintBasic:1 Service	ISO/IEC 29341-9-12
UPnP Scan:1 Service	ISO/IEC 29341-9-13
UPnP Scanner:1.0 Device	ISO/IEC 29341-9-2
UPnP QoS Architecture:1.0	ISO/IEC 29341-10-1
UPnP QosDevice:1 Service	ISO/IEC 29341-10-10
UPnP QosManager:1 Service	ISO/IEC 29341-10-11
UPnP QosPolicyHolder:1 Service	ISO/IEC 29341-10-12
UPnP QoS Architecture:2	ISO/IEC 29341-11-1
UPnP QosDevice:2 Service	ISO/IEC 29341-11-10
UPnP QosManager:2 Service	ISO/IEC 29341-11-11
UPnP QosPolicyHolder:2 Service	ISO/IEC 29341-11-12
UPnP QOS v2 Schema Files	ISO/IEC 29341-11-2
UPnP RemoteUIClientDevice:1 Device	ISO/IEC 29341-12-1
UPnP RemoteUIClient:1 Service	ISO/IEC 29341-12-10
UPnP RemoteUIServer:1 Service	ISO/IEC 29341-12-11
UPnP RemoteUIServerDevice:1 Device	ISO/IEC 29341-12-2
UPnP DeviceSecurity:1 Service	ISO/IEC 29341-13-10
UPnP SecurityConsole:1 Service	ISO/IEC 29341-13-11
UPnP ContentDirectory:3 Service	ISO/IEC 29341-14-12:2011
UPnP MediaServer:3 Device	ISO/IEC 29341-14-3:2011
UPnP ContentSync:1	ISO/IEC 29341-15-10:2011
UPnP Low Power Architecture:1	ISO/IEC 29341-16-1:2011
UPnP LowPowerProxy:1 Service	ISO/IEC 29341-16-10:2011

UPnP LowPowerDevice:1 Service	ISO/IEC 29341-16-11:2011
UPnP QoS Architecture:3	ISO/IEC 29341-17-1:2011
UPnP QoSDevice:3 Service	ISO/IEC 29341-17-10:2011
UPnP QoSManager:3 Service	ISO/IEC 29341-17-11:2011
UPnP QoSPolicyHolder:3 Service	ISO/IEC 29341-17-12:2011
UPnP QoSDevice:3 Addendum	ISO/IEC 29341-17-13:2011
UPnP RemoteAccessArchitecture:1	ISO/IEC 29341-18-1:2011
UPnP InboundConnectionConfig:1 Service	ISO/IEC 29341-18-10:2011
UPnP RADAConfig:1 Service	ISO/IEC 29341-18-11:2011
UPnP RADASync:1 Service	ISO/IEC 29341-18-12:2011
UPnP RATAConfig:1 Service	ISO/IEC 29341-18-13:2011
UPnP RAClient:1 Device	ISO/IEC 29341-18-2:2011
UPnP RAServer:1 Device	ISO/IEC 29341-18-3:2011
UPnP RADiscoveryAgent:1 Device	ISO/IEC 29341-18-4:2011
UPnP SolarProtectionBlind:1 Device	ISO/IEC 29341-19-1:2011
UPnP TwoWayMotionMotor:1 Service	ISO/IEC 29341-19-10:2011
UPnP AV Architecture:2	ISO/IEC 29341-20-1
UPnP AVTransport:3 Service	ISO/IEC 29341-20-10
UPnP ConnectionManager:3 Service	ISO/IEC 29341-20-11
UPnP ContentDirectory:4 Device	ISO/IEC 29341-20-12
UPnP RenderingControl:3 Service	ISO/IEC 29341-20-13
UPnP ScheduledRecording:2 Service	ISO/IEC 29341-20-14
UPnP MediaRenderer:3 Service	ISO/IEC 29341-20-2
UPnP MediaServer:4 Device	ISO/IEC 29341-20-3
UPnP AV Datastructure Template:1	ISO/IEC 29341-20-4
UPnP InternetGatewayDevice:2 Device	ISO/IEC 29341-24-1
UPnP WANIPConnection:2 Service	ISO/IEC 29341-24-10
UPnP WANIPv6FirewallControl:1 Service	ISO/IEC 29341-24-11
UPnP WANConnectionDevice:2 Service	ISO/IEC 29341-24-2
UPnP WANDevice:2 Device	ISO/IEC 29341-24-3
UPnP Telephony Architecture:2	ISO/IEC 29341-26-1
UPnP CallManagement:2 Service	ISO/IEC 29341-26-10
UPnP MediaManagement:2 Service	ISO/IEC 29341-26-11
UPnP Messaging:2 Service	ISO/IEC 29341-26-12
UPnP PhoneManagement:2 Service	ISO/IEC 29341-26-13
UPnP AddressBook:1 Service	ISO/IEC 29341-26-14
UPnP Calendar:1 Service	ISO/IEC 29341-26-15
UPnP Presense:1 Service	ISO/IEC 29341-26-16
UPnP TelephonyClient:2 Device	ISO/IEC 29341-26-2
UPnP TelephonyServer:2 Device	ISO/IEC 29341-26-3
UPnP Friendly Info Update:1 Service	ISO/IEC 29341-27-1
UPnP MultiScreen MultiScreen Architecture:1	ISO/IEC 29341-28-1
UPnP MultiScreen Application Management:1 Service	ISO/IEC 29341-28-10
UPnP MultiScreen Screen:1 Device	ISO/IEC 29341-28-2
UPnP MultiScreen Application Management:2 Service	ISO/IEC 29341-29-10
UPnP MultiScreen Screen:2 Device	ISO/IEC 29341-29-2
UPnP IoT Management and Control Architecture Overview:1	ISO/IEC 29341-30-1

ISO/IEC 29341-20-10:2017(E)

UPnP DataStore:1 Service	ISO/IEC 29341-30-10
UPnP IoT Management and Control Data Model:1 Service	ISO/IEC 29341-30-11
UPnP IoT Management and Control Transport Generic:1 Service	ISO/IEC 29341-30-12
UPnP IoT Management and Control:1 Device	ISO/IEC 29341-30-2
UPnP Energy Management:1 Service	ISO/IEC 29341-31-1

1 Scope

This service definition is compliant with UPnP Device Architecture version 1.0 [14].

This service type enables control over the transport of audio and video streams. The service type defines a common model for A/V transport control suitable for a generic user interface. It can be used to control a wide variety of disc, tape and solid-state based media devices such as CD players, VCRs and MP3 players. A minimal implementation of this service can be used to control tuners.

The service type is related to the ConnectionManager service type, which describes A/V connection setup procedures, and the ContentDirectory service, which offers meta-information about the resource stored on the media. AVTransport also offers an action to retrieve any metadata embedded in the resource itself.

This service type does not offer scheduled recording.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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Latest version available at: <http://www.upnp.org/schemas/av/av.xsd>.

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Latest version available at: <http://www.upnp.org/schemas/av/avs.xsd>.

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3 Terms, definitions, symbols and abbreviations

For the purposes of this document, the terms and definitions given in [14] and the following subclauses 3.1 and 3.2 apply.

3.1 Provisioning terms

3.1.1

allowed

A

The definition or behavior is allowed.

3.1.2

conditionally allowed

CA

The definition or behavior depends on a condition. If the specified condition is met, then the definition or behavior is allowed, otherwise it is not allowed.

3.1.3

conditionally required

CR

The definition or behavior depends on a condition. If the specified condition is met, then the definition or behavior is required. Otherwise the definition or behavior is allowed as default unless specifically defined as not allowed.

3.1.4

required

R

The definition or behavior is required.

3.1.5

R/A

Used in a table column heading to indicate that each abbreviated entry in the column declares the provisioning status of the item named in the entry's row.

3.1.6

X

Vendor-defined, non-standard.

3.1.7

-D

Declares that the item referred to is deprecated, when it is appended to any of the other abbreviated provisioning terms.