

ISO/IEC 29341-20-1:2017-09 (E)

Information technology - UPnP Device Architecture - Part 20-1: Audio video device control protocol - Level 4 - Audio video architecture

Contents

Page

1	Scope	1
1.1	Introduction	1
1.2	Goals	1
1.3	Non-Goals	1
2	Normative references	1
3	Terms, definitions, symbols and abbreviations	2
4	Architectural Overview	3
5	Playback Architecture	5
5.1	MediaServer	6
5.1.1	ContentDirectory Service	7
5.1.2	ConnectionManager Service	7
5.1.1	AVTransport Service	7
5.2	MediaRenderer	7
5.2.1	RenderingControl Service	8
5.2.2	ConnectionManager Service	8
5.2.3	AVTransport Service	8
5.3	Control point	8
5.3.1	2-Box model: Control point with Decoder	11
5.3.2	2-Box model: Control point with Content	12
5.4	Tracking streams in the network	12
6	Example Playback Scenarios	12
6.1	3-Box model: Isochronous-Push (IEC61883/IEEE1394)	13
6.2	3-Box model: Asynchronous-Pull (e.g. HTTP GET)	14
6.3	2-Box model: Control point with Decoder using Isochronous-Push (e.g. IEEE-1394)	15
6.4	2-Box model: Control point with Decoder using Asynchronous-Pull (e.g. HTTP GET)	17
6.4.1	Minimal Implementation	17
6.5	2-Box model: Control point with Content using Isochronous-Push (e.g. IEEE-1394)	19
6.6	2-Box Model: Control point with Content using Asynchronous-Pull (e.g. HTTP GET)	20
6.7	No <i>ConnectionManager::PrepareForConnection()</i> Action	20
7	Advanced Playback Scenarios	21
7.1	Synchronized playback	22
7.2	Multi-streaming	24
8	Recording Architecture	26
8.1	Legacy recording mechanism	26
8.2	Scheduled Recording	26

List of Figures

Figure 1 — Typical UPnP Device Interaction Model	3
Figure 2 — UPnP AV Device Interaction Model	4
Figure 3 — General Device Architecture aka the 3-Box model	5
Figure 4 — General Interaction Diagram of the 3-Box model	10
Figure 5 — Control point with Decoder	11
Figure 6 — Control point with Content.....	12
Figure 7 — 3-Box Model: Isochronous-Push transfer protocols	14
Figure 8 — 3-Box model:Asynchronous-Pull transfer protocol.....	15
Figure 9 — 2-Box model: Control point with Decoder using Isochronous-Push	16
Figure 10 — 2-Box model: Control point with Decoder using Asynchronous-Pull	17
Figure 11 — 2-Box model: Minimal Implementation	18
Figure 12 — 2-Box model: Control point with Content using Isochronous-Push.....	19
Figure 13 — 2-Box model: Control point with Content using Asynchronous-Pull	20
Figure 14 — 3-Box model: no <i>ConnectionManager::PrepareForConnection()</i> action	21
Figure 15 — Sequence diagram for setting up synchronized playback	23
Figure 16 — Multi-streaming playback sequence.....	25
Figure 17 — Relationship between a Schedule and the related Tasks.....	27
Figure 18 — Out of bounds content creation by the ScheduledRecording service.....	27