

|            |                                                                                                                                              |                                          |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| <b>STN</b> | <b>Usmernenia DLNA (Aliancia pre digitálnu domácu sieť) na interoperabilitu domácich sieťových zariadení. Časť 2: Mediálne formáty DLNA.</b> | <b>STN<br/>EN 62481-2</b><br><br>36 8036 |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 09/14

Obsahuje: EN 62481-2:2014, IEC 62481-2:2013

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Podľa zákona č. 264/1999 Z. z. v znení neskorších predpisov sa môžu slovenské technické normy rozmnožovať a rozširovať iba so súhlasom Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 62481-2**

January 2014

ICS 33.160; 35.100.05; 35.110

English version

**Digital living network alliance (DLNA) home networked device  
interoperability guidelines -  
Part 2: DLNA media formats  
(IEC 62481-2:2013)**

Lignes directrices pour l'interopérabilité  
des dispositifs domestiques de la DLNA  
(Digital living network alliance) -  
Partie 2: Formats de média DLNA  
(CEI 62481-2:2013)

Digital living network alliance (DLNA)  
Interoperabilitäts-Richtlinien für Geräte im  
Heimnetzwerk -  
Teil 2: Medien-Formate  
(IEC 62481-2:2013)

This European Standard was approved by CENELEC on 2013-10-30. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

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Europäisches Komitee für Elektrotechnische Normung

**CEN-CENELEC Management Centre: Avenue Marnix 17, B - 1000 Brussels**

## Foreword

The text of document 100/1993/CDV, future edition 2 of IEC 62481-2, prepared by technical area 9, "Audio, video and multimedia applications for end-user network", of IEC/TC 100, "Audio, video and multimedia systems and equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62481-2:2014.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2014-07-30
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-10-30

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## Endorsement notice

The text of the International Standard IEC 62481-2:2013 was approved by CENELEC as a European Standard without any modification.

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

| <u>Publication</u> | <u>Year</u> | <u>Title</u>                                                                                                                                            | <u>EN/HD</u> | <u>Year</u> |
|--------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|
| IEC 62481-1        | 2013        | Digital living network alliance (DLNA) home networked device interoperability guidelines - Part 1: Architecture and protocols                           | EN 62481-1   | 2014        |
| ETSI EN 301 192    | 2003        | Digital Video Broadcasting (DVB) - DVB specification for data broadcasting, V1.2.1                                                                      | -            | -           |
| ETSI EN 300 472    | 2003        | Digital Video Broadcasting (DVB) - Specification for conveying ITU-R system B teletext in DVB bitstreams                                                | -            | -           |
| ETSI TS 102 366    | 2005        | Digital Audio Compression (AC-3, Enhanced AC-3)                                                                                                         | -            | -           |
| ETSI TS 102 366    | 2008        | Digital Audio Compression (AC-3, Enhanced AC-3)                                                                                                         | -            | -           |
| ETSI TS 101 154    | 2005        | Digital Video Broadcasting (DVB); Specification for the use of Video and Audio Coding in Broadcasting Applications based on the MPEG-2 Transport Stream | -            | -           |
| ETSI TS 101 154    | 2009        | Digital Video Broadcasting (DVB); Specification for the use of Video and Audio Coding in Broadcasting Applications based on the MPEG-2 Transport Stream | -            | -           |
| ETSI EN 300 468    | 2003        | Digital Video Broadcasting (DVB): Specification for Service Information (SI) in DVB systems                                                             | -            | -           |
| ETSI EN 300 468    | 2009        | Digital Video Broadcasting (DVB): Specification for Service Information (SI) in DVB systems                                                             | -            | -           |
| ETSI EN 301 775    | 2003        | Digital Video Broadcasting (DVB) - Specification for the carriage of Vertical Blanking Information (VBI) data in DVB bitstreams                         | -            | -           |
| ISO/IEC 10918-1    | 1994        | Information technology - Digital compression and coding of continuous-tone still images: Requirements and guidelines                                    | -            | -           |
| ISO/IEC 11172-2    | 1993        | Information technology - Coding of moving pictures and associated audio for digital storage media at up to about 1,5 Mbit/s - Part 2: Video             | -            | -           |
| ISO/IEC 11172-3    | 1993        | Information technology - Coding of moving pictures and associated audio for digital storage media at up to about 1,5 Mbit/s - Part 3: Audio             | -            | -           |

| <u>Publication</u>                  | <u>Year</u>  | <u>Title</u>                                                                                                                                                                      | <u>EN/HD</u> | <u>Year</u> |
|-------------------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|
| ISO/IEC 13818-1<br>+ corr. December | 2000<br>2002 | Information technology - Generic coding of moving pictures and associated audio information - Part 1: Systems                                                                     | -            | -           |
| ISO/IEC 13818-2                     | 2000         | Information technology - Generic coding of moving pictures and associated audio information: Video                                                                                | -            | -           |
| ISO/IEC 13818-3                     | 1998         | Information technology - Generic coding of moving pictures and associated audio information - Part 3: Audio                                                                       | -            | -           |
| ISO/IEC 13818-7                     | 2003         | Information technology - Generic coding of moving pictures and associated audio information - Part 7: Advanced Audio Coding (AAC)                                                 | -            | -           |
| + A1                                | 2007         |                                                                                                                                                                                   | -            | -           |
| + A1                                | 2004         |                                                                                                                                                                                   | -            | -           |
| ISO/IEC 13818-11                    | 2004         | Information technology - Generic coding of moving pictures and associated audio information - Part 11: IPMP on MPEG-2 systems                                                     | -            | -           |
| ISO/IEC 14496-1                     | 2001         | Information technology - Coding of audio-visual objects - Part1: Systems                                                                                                          | -            | -           |
| ISO/IEC 14496-2<br>+ A2             | 2001<br>2002 | Information technology - Coding of audio-visual objects - Part 2: Visual                                                                                                          | -<br>-       | -<br>-      |
| ISO 14496-2<br>+ A2                 | 2004<br>2005 | Information technology - Coding of audio-visual objects - Part 2: Visual                                                                                                          | -<br>-       | -<br>-      |
| ISO/IEC 14496-2                     | 2004         | Information Technology – Coding of audio-visual objects - Part 2: Visual                                                                                                          | -            | -           |
| + A1                                | 2004         |                                                                                                                                                                                   | -            | -           |
| + A1                                | 2004         |                                                                                                                                                                                   | -            | -           |
| + A3                                | 2007         |                                                                                                                                                                                   | -            | -           |
| + A4                                | 2008         |                                                                                                                                                                                   | -            | -           |
| ISO/IEC 14496-3<br>+ A1             | 2001<br>2003 | Information technology - Coding of audio-visual objects - Part 3: Audio                                                                                                           | -<br>-       | -<br>-      |
| ISO/IEC 14496-3                     | 2005         | Information technology - Coding of audio-visual objects - Part 3: Audio                                                                                                           | -            | -           |
| + A2                                | 2006         |                                                                                                                                                                                   | -            | -           |
| + A2                                | 2006         |                                                                                                                                                                                   | -            | -           |
| ISO/IEC 14496-4<br>+ corr. August   | 2004<br>2005 | Information technology - Coding of audio-visual objects - Part 4: Conformance testing                                                                                             | -            | -           |
| ISO/IEC 14496-10                    | 2003         | Information technology - Coding of audio-visual objects - Part 10: Advanced Video Coding                                                                                          | -            | -           |
| ISO/IEC 14496-12                    | 2004         | Information technology - Coding of audio-visual objects - Part 12:ISO base media file format - Hint track format for ALC/LCT and FLUTE transmission and multiple meta box support | -            | -           |
| ISO/IEC 14496-14                    | 2003         | Information technology - Coding of Audio-Visual Objects - Part 14: MP4 file format                                                                                                | -            | -           |

| <u>Publication</u>        | <u>Year</u> | <u>Title</u>                                                                                                                   | <u>EN/HD</u> | <u>Year</u> |
|---------------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|
| ISO/IEC 14496-15          | 2004        | Information technology - Coding of Audio-Visual Objects - Part 15: AVC file format                                             | -            | -           |
| ISO/IEC 15948             | 2004        | Information technology - Computer graphics and image processing - Portable Network Graphics (PNG) - Functional specification   | -            | -           |
| ISO/IEC 23003-1           | 2007        | Information technology - MPEG audio technologies - Part 1: MPEG Surround                                                       | -            | -           |
| ISO/IEC 29341-3-12        | 2008        | Information technology - UPnP Device Architecture - Part 3-12: Audio Video Device Control Protocol - Content Directory Service | -            | -           |
| ETSI TS 102 114           | -           | DTS Coherent Acoustics; Core and Extensions                                                                                    | -            | -           |
| ETSI TS 102 366           | -           | Digital Audio Compression (AC-3, Enhanced AC-3) Standard, Version 1.1.1                                                        | -            | -           |
| ETSI TS 102 563           | -           | Transport of Advanced Audio Coding AAC) audio, Digital Audio Broadcasting (DAB), Version 1.1.1                                 | -            | -           |
| IETF RFC 1945             | -           | Hypertext Transfer Protocol – HTTP/1.0, T. Berners-Lee, MIT/LCS, R. Fielding, UC Irvine, H. Frystyk                            | -            | -           |
| IETF RFC 2046             | -           | Multipurpose Internet Mail Extensions (MIME) - Part 2: Media Types                                                             | -            | -           |
| IETF RFC 2616             | -           | Hypertext Transfer Protocol HTTP/1.1.                                                                                          | -            | -           |
| IETF RFC 3551             | -           | RTP Profile for Audio and Video Conferences with Minimal Control                                                               | -            | -           |
| IETF RFC 3555             | -           | MIME Type Registration of RTP Payload Formats, S. Casner, Packet Design                                                        | -            | -           |
| ANSI/SCTE 43              | 2005        | Digital Video Systems Characteristics Standard for Cable Television                                                            | -            | -           |
| ANSI/SCTE 65              | 2008        | Service Information Delivered Out-Of-Band For Digital Cable Television                                                         | -            | -           |
| ANSI/SCTE-128             | 2010        | AVC Video Systems and Transport Constraints for Cable Television                                                               | -            | -           |
| ARIB ST B-1               | -           | Digital Receiver for Digital Satellite Broadcasting Services using Communication Satellites                                    | -            | -           |
| ARIB TR B-14              | -           | Operational Guidelines For Digital Terrestrial Television Broadcasting                                                         | -            | -           |
| ARIB TR B-15              | -           | Operational Guidelines For Digital Satellite Broadcasting                                                                      | -            | -           |
| ARIB STD B-21             | -           | Receiver for Digital Broadcasting                                                                                              | -            | -           |
| ARIB B 24                 | -           | Data Coding and Transmission Specification for Digital Broadcasting, Association of Radio Industries and Businesses            | -            | -           |
| ARIB STD B-32             | -           | Video Coding, Audio Coding and Multiplexing - Specifications for Digital Broadcasting                                          | -            | -           |
| ASF                       | -           | Advanced System Format (ASF) Specification                                                                                     | -            | -           |
| ATRAC3 plus specification | -           | Licensing Program for DLNA, Sony                                                                                               | -            | -           |

| <u>Publication</u>      | <u>Year</u> | <u>Title</u>                                                                                                                                                                                          | <u>EN/HD</u> | <u>Year</u> |
|-------------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|
| ATSC Standard A/6       | -           | Program and System Information Protocol for Terrestrial Broadcast and Cable (PSIP)                                                                                                                    | -            | -           |
| ATSC Standard A/52A     | -           | Digital Audio Compression (AC-3*) Rev A, Advanced Television Systems Committee                                                                                                                        | -            | -           |
| ATSC A/53B Annex B      | -           | ATSC Digital Television Standard - Part 1: Digital Television System                                                                                                                                  | -            | -           |
| ATSC Standard A/53-     | -           | Digital Television Standard                                                                                                                                                                           | -            | -           |
| ETSI TS 102 005         | -           | Specification for the use of video and audio coding in DVB services delivered directly over IP, Digital Video Broadcasting (DVB), Version 1.2.1                                                       | -            | -           |
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| ETSI EN 301 775         | -           | Specification for the carriage of Vertical Blanking Information (VBI) data in DVB bitstreams (DVB VBI data), European Telecommunications Standard Institute, V1.2.1, Digital Video Broadcasting (DVB) | -            | -           |
| ETSI EN 301 192         | -           | DVB Specification for Data broadcasting (DVB-data broadcasting), V1.3.1, European Telecommunications Standard Institute                                                                               | -            | -           |
| ETSI EN 300 743         | -           | Subtitling systems (DVB Subtitles), V1.2.1, Digital Video Broadcasting (DVB), European Telecommunications Standard Institute                                                                          | -            | -           |
| ETSI EN 300 468         | -           | Specification for Service Information (SI) In DVB systems (SI), Digital Video Broadcasting (DVB), v1.10.1, European Telecommunications Standard Institute                                             | -            | -           |
| ITU-R Rec BO 1516       | -           | Digital multiprogramme television systems for use by satellite operating in the 11/12 GHz frequency range, System B, International Telecommunications Union                                           | -            | -           |
| ITU-T Rec G.726         | -           | General Aspects of Digital Transmission Systems, Terminal Equipment - 40, 32, 24, 16 kbit/s Adaptive Differential Pulse Code Modulation (ADPCM)                                                       | -            | -           |
| ITU-T Rec H.263 Annex X | -           | Profiles and levels definition                                                                                                                                                                        | -            | -           |
| ITU-T Rec H.263         | 2005        | Video coding for low bit rate communication                                                                                                                                                           | -            | -           |
| ISO/IEC 11172-1         | 1993        | Information technology - Coding of moving pictures and associated audio for digital storage media at up to about 1,5 Mbit/s - Part 1: Systems                                                         | -            | -           |
| ITU-R Rec BS.1196-11    | 2011        | Audio coding for digital terrestrial television broadcasting, Annex 2 (Dolby* AC-3 Audio), International Telecommunication Union                                                                      | -            | -           |

| <u>Publication</u> | <u>Year</u> | <u>Title</u>                                                                                                                                                                                                                                 | <u>EN/HD</u> | <u>Year</u> |
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| ETSI TSR 101 154   | -           | Implementation Guidelines for the use of MPEG-2 Systems, Video and Audio Coding in Broadcasting Applications based on the MPEG-2 Transport Stream, V1.4.1, Digital Video Broadcasting (DVB*), European Telecommunications Standard Institute | -            | -           |

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3GPP TS 26.244, *3GPP file format (3GP)*, Release 7

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3GPP TS 26.346, *Multimedia Broadcast/Multicast Service (MBMS); Protocols and codecs*, Release 7



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# INTERNATIONAL STANDARD



**Digital living network alliance (DLNA) home networked device interoperability  
guidelines –  
Part 2: DLNA media formats**



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# INTERNATIONAL STANDARD



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**Digital living network alliance (DLNA) home networked device interoperability  
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## CONTENTS

|                                                            |     |
|------------------------------------------------------------|-----|
| FOREWORD.....                                              | 20  |
| INTRODUCTION.....                                          | 22  |
| 1 Scope.....                                               | 23  |
| 2 Normative references .....                               | 23  |
| 3 Terms, definitions and abbreviated terms .....           | 30  |
| 3.1 Terms and definitions .....                            | 30  |
| 3.2 Abbreviated terms .....                                | 34  |
| 3.4 Conventions .....                                      | 46  |
| 4 Guideline terminology and conventions .....              | 46  |
| 4.1 Guideline compliance classifiers.....                  | 46  |
| 4.2 Standard or specification usage classifiers .....      | 46  |
| 4.3 Guideline font usage conventions .....                 | 47  |
| 4.4 Layout for guidelines .....                            | 47  |
| 4.5 Interoperability Guidelines Usage .....                | 50  |
| 5 Compendium of Media Format Profiles .....                | 53  |
| 5.1 Overview .....                                         | 53  |
| 5.2 Categorization labels.....                             | 54  |
| 5.3 Image Class: JPEG profiles.....                        | 54  |
| 5.4 Image Class: PNG profiles .....                        | 55  |
| 5.5 Audio Class: AC-3 profiles.....                        | 55  |
| 5.6 Audio Class: AMR profiles .....                        | 56  |
| 5.7 Audio Class: ATRAC3plus profiles.....                  | 56  |
| 5.8 Audio Class: LPCM profiles .....                       | 56  |
| 5.9 Audio Class: MP3 profiles .....                        | 56  |
| 5.10 Audio Class: MPEG-4 profiles .....                    | 57  |
| 5.11 Audio Class: WMA profiles .....                       | 62  |
| 5.12 AV Class: MPEG-1 profiles.....                        | 62  |
| 5.13 AV Class: MPEG-2 profiles.....                        | 62  |
| 5.14 AV Class: MPEG-4 Part 2 profiles .....                | 72  |
| 5.15 AV Class: MPEG-4 Part 10 (AVC) profiles .....         | 80  |
| 5.16 AV Class: WMV9 profiles.....                          | 105 |
| 5.17 Media collection profiles .....                       | 106 |
| 5.18 Printer XHTML document profiles .....                 | 106 |
| 5.19 Image Class: GIF profiles .....                       | 107 |
| 5.20 Audio Class: DTS Digital Surround profiles.....       | 107 |
| 5.21 Audio Class: DTS-HD profiles.....                     | 107 |
| 5.22 Audio Class: Enhanced AC-3 profiles .....             | 108 |
| 5.23 Audio Class: MLP profiles .....                       | 108 |
| 5.24 Audio Class: MPEG-1/2 profiles .....                  | 108 |
| 5.25 AV Class: VC-1 profiles .....                         | 108 |
| 6 Media Format interoperability model.....                 | 110 |
| 6.1 Media interoperability guidelines .....                | 110 |
| 6.1.1 General .....                                        | 110 |
| 6.1.2 MF mandatory media formats: support guidelines ..... | 110 |
| 6.1.3 MF optional media formats: support guidelines .....  | 111 |

|        |                                                                                    |     |
|--------|------------------------------------------------------------------------------------|-----|
| 6.1.4  | MF optional media formats: content availability .....                              | 112 |
| 6.1.5  | MF optional media formats: user indications .....                                  | 112 |
| 6.1.6  | MF media format overlap .....                                                      | 113 |
| 6.1.7  | MF Profile Parameter Sets.....                                                     | 114 |
| 6.1.8  | MF audio rendering guidelines.....                                                 | 114 |
| 6.2    | Mandatory and optional profile guidelines.....                                     | 115 |
| 6.2.1  | MF mandatory image format profile for HND and MHD Device<br>Categories.....        | 115 |
| 6.2.2  | MF optional image format profile for HND and MHD Device<br>Categories.....         | 115 |
| 6.2.3  | MF mandatory audio format profile for the HND Device Category .....                | 115 |
| 6.2.4  | MF optional audio format profile for the HND Device Category .....                 | 115 |
| 6.2.5  | MF mandatory audio format profiles for the MHD Device Category .....               | 115 |
| 6.2.6  | MF optional audio format profiles for the MHD Device Category .....                | 115 |
| 6.2.7  | MF mandatory AV format profiles for the HND Device Category.....                   | 116 |
| 6.2.8  | MF optional AV format profiles for the HND Device Category.....                    | 116 |
| 6.2.9  | MF mandatory AV format profiles for the MHD Device Category .....                  | 116 |
| 6.2.10 | MF optional AV format profiles for the MHD Device Category .....                   | 116 |
| 6.2.11 | MF optional Media Collection Profile for the HND and MHD Device<br>Categories..... | 116 |
| 6.2.12 | MF mandatory print format profile for DMP <sub>r</sub> Device Class .....          | 117 |
| 7      | Image Class Media Format Profiles .....                                            | 118 |
| 7.1    | JPEG profiling guidelines .....                                                    | 118 |
| 7.1.1  | JPEG SM format profile .....                                                       | 118 |
| 7.1.2  | JPEG MED format profile.....                                                       | 119 |
| 7.1.3  | JPEG LRG format profile .....                                                      | 120 |
| 7.1.4  | JPEG format profile .....                                                          | 120 |
| 7.1.5  | JPEG_RES_<H>_<V> format profile .....                                              | 120 |
| 7.1.6  | Use of JPEG_RES_<H>_<V> in a <res> element .....                                   | 121 |
| 7.1.7  | JPEG TN format profile.....                                                        | 123 |
| 7.1.8  | JPEG SM ICO format profile .....                                                   | 123 |
| 7.1.9  | JPEG LRG ICO format profile .....                                                  | 124 |
| 7.1.10 | JPEG format profile: MIME type definition .....                                    | 125 |
| 7.2    | PNG profiling guidelines .....                                                     | 125 |
| 7.2.1  | PNG TN format profile .....                                                        | 125 |
| 7.2.2  | PNG SM ICO format profile.....                                                     | 126 |
| 7.2.3  | PNG LRG ICO format profile.....                                                    | 127 |
| 7.2.4  | PNG LRG format profile.....                                                        | 127 |
| 7.2.5  | PNG format profile: ancillary chunks.....                                          | 128 |
| 7.2.6  | PNG format profile: MIME type definition .....                                     | 129 |
| 7.3    | GIF profiling guidelines.....                                                      | 129 |
| 7.3.1  | GIF LRG format profile .....                                                       | 129 |
| 7.3.2  | GIF format profile: MIME type definition.....                                      | 130 |
| 8      | Audio class media format profiles .....                                            | 130 |
| 8.1    | AC-3 profiling guidelines .....                                                    | 130 |
| 8.1.1  | AC-3 audio format .....                                                            | 130 |
| 8.1.2  | AC-3 audio format: MIME type definition.....                                       | 131 |
| 8.2    | AMR profiling guidelines.....                                                      | 131 |
| 8.2.1  | AMR audio format.....                                                              | 131 |

|        |                                                          |     |
|--------|----------------------------------------------------------|-----|
| 8.2.2  | AMR audio format: MIME type definition .....             | 132 |
| 8.2.3  | AMR audio format.....                                    | 132 |
| 8.2.4  | AMR audio format: systems portion profiling .....        | 133 |
| 8.2.5  | AMR audio format: MIME type definition .....             | 134 |
| 8.3    | ATRAC3plus profiling guidelines .....                    | 134 |
| 8.3.1  | ATRAC3plus audio format .....                            | 134 |
| 8.3.2  | ATRAC3plus audio format: MIME type definition .....      | 134 |
| 8.4    | LPCM profiling guidelines .....                          | 135 |
| 8.4.1  | General .....                                            | 135 |
| 8.4.2  | LPCM audio format.....                                   | 135 |
| 8.4.3  | LPCM audio format: Transport Alignment Position .....    | 136 |
| 8.4.4  | TLPCM audio format: MIME type definition .....           | 136 |
| 8.4.5  | LPCM audio format: Rendering Endpoint capabilities.....  | 137 |
| 8.4.6  | LPCM audio format: MPS signaling.....                    | 137 |
| 8.4.7  | LPCM audio format: low.....                              | 137 |
| 8.4.8  | LPCM audio format: MPS .....                             | 138 |
| 8.5    | MP3 profiling guidelines .....                           | 139 |
| 8.5.1  | MP3 audio format .....                                   | 139 |
| 8.5.2  | MP3 audio format: ID3 tag tolerance.....                 | 140 |
| 8.5.3  | MP3 audio format: ID3 tag placement .....                | 140 |
| 8.5.4  | MP3 audio format: MIME type definition.....              | 141 |
| 8.5.5  | MP3 audio format .....                                   | 141 |
| 8.6    | MPEG-4 profiling guidelines .....                        | 142 |
| 8.6.1  | General .....                                            | 142 |
| 8.6.2  | AAC audio format: baseline (1).....                      | 145 |
| 8.6.3  | AAC audio format: exception (1).....                     | 147 |
| 8.6.4  | AAC audio format: exception (2).....                     | 147 |
| 8.6.5  | AAC audio format: content (1) .....                      | 147 |
| 8.6.6  | AAC audio format: baseline (2).....                      | 148 |
| 8.6.7  | AAC audio format: content (2) .....                      | 149 |
| 8.6.8  | AAC audio format: content (3) .....                      | 149 |
| 8.6.9  | AAC audio format: baseline (3).....                      | 150 |
| 8.6.10 | AAC audio format: content (4) .....                      | 151 |
| 8.6.11 | AAC audio format: content (5) .....                      | 151 |
| 8.6.12 | AAC audio format: exception (3).....                     | 152 |
| 8.6.13 | AAC audio format: Rendering Endpoint capabilities .....  | 152 |
| 8.6.14 | AAC audio format: exception (4).....                     | 152 |
| 8.6.15 | AAC audio format: Rendering Endpoints capabilities. .... | 153 |
| 8.6.16 | AAC audio format: baseline (4).....                      | 153 |
| 8.6.17 | AAC audio format: content (6) .....                      | 154 |
| 8.6.18 | AAC audio format: content (7) .....                      | 154 |
| 8.6.19 | AAC audio format: baseline (5).....                      | 155 |
| 8.6.20 | AAC audio format: content (8) .....                      | 156 |
| 8.6.21 | AAC audio format: content (9) .....                      | 156 |
| 8.6.22 | AAC audio format: baseline (6).....                      | 157 |
| 8.6.23 | AAC audio format: content (10).....                      | 158 |
| 8.6.24 | AAC audio format: baseline (7).....                      | 158 |
| 8.6.25 | AAC audio format: content (11).....                      | 159 |
| 8.6.26 | AAC audio format: baseline (8).....                      | 160 |



|                                                                 |     |
|-----------------------------------------------------------------|-----|
| 8.6.27 AAC audio format: content (12).....                      | 161 |
| 8.6.28 AAC audio format: audio interchange formats .....        | 161 |
| 8.6.29 AAC audio format: audio interchange formats .....        | 162 |
| 8.6.30 AAC audio format: audio interchange formats .....        | 162 |
| 8.6.31 AAC audio format: audio interchange formats .....        | 163 |
| 8.6.32 AAC audio format: audio interchange formats .....        | 164 |
| 8.6.33 2 AAC audio format: audio interchange formats .....      | 164 |
| 8.6.34 AAC audio format: ADTS audio interchange formats .....   | 165 |
| 8.6.35 AAC audio format: MP4 audio interchange format.....      | 166 |
| 8.6.36 AAC audio format: MP4 audio interchange format.....      | 170 |
| 8.6.37 AAC audio format: 3GP audio interchange formats .....    | 170 |
| 8.6.38 AAC audio format: MIME type definition.....              | 170 |
| 8.6.39 AAC audio format: MIME type definition.....              | 171 |
| 8.6.40 AAC audio format: MIME type definition.....              | 171 |
| 8.6.41 AAC audio format: baseline (9).....                      | 172 |
| 8.6.42 AAC audio format: BSAC_ISO encoding .....                | 173 |
| 8.6.43 AAC audio format: audio interchange formats .....        | 173 |
| 8.6.44 AAC audio format: MIME type definitions .....            | 173 |
| 8.6.45 AAC audio format: baseline .....                         | 174 |
| 8.6.46 AAC audio format: baseline .....                         | 174 |
| 8.6.47 AAC audio format: Rendering Endpoint capabilities .....  | 175 |
| 8.6.48 AAC audio format: baseline .....                         | 176 |
| 8.6.49 AAC audio format: Rendering Endpoint capabilities .....  | 176 |
| 8.6.50 AAC audio format: baseline .....                         | 177 |
| 8.6.51 AAC audio format: Rendering Endpoint capabilities .....  | 178 |
| 8.6.52 AAC audio format: baseline .....                         | 178 |
| 8.6.53 AAC audio format: Rendering Endpoint capabilities .....  | 179 |
| 8.6.54 AAC audio format: baseline .....                         | 180 |
| 8.6.55 AAC audio format: Rendering Endpoint capabilities .....  | 180 |
| 8.6.56 AAC audio format: baseline .....                         | 181 |
| 8.6.57 AAC audio format: MPS signaling .....                    | 182 |
| 8.6.58 AAC audio format: DAB audio super frame .....            | 182 |
| 8.6.59 AAC audio format: MIME type definition.....              | 183 |
| 8.6.60 AAC audio format: ADTS audio interchange formats .....   | 183 |
| 8.6.61 AAC audio format: baseline .....                         | 183 |
| 8.6.62 Audio format: Rendering Endpoints capabilities .....     | 185 |
| 8.6.63 Audio format: baseline .....                             | 185 |
| 8.6.64 Audio format: Rendering Endpoints capabilities .....     | 185 |
| 8.6.65 AAC audio format: audio interchange formats .....        | 186 |
| 8.6.66 Audio format: baseline .....                             | 186 |
| 8.6.67 AAC audio format: Rendering Endpoints capabilities ..... | 187 |
| 8.6.68 AAC audio format: baseline .....                         | 188 |
| 8.6.69 Audio format: Rendering Endpoints capabilities .....     | 189 |
| 8.6.70 ALS audio format: ALS_ISO profile .....                  | 190 |
| 8.6.71 AAC audio format: ADTS audio interchange formats .....   | 191 |
| 8.6.72 ALS audio format: ALS_MULT5_ISO profile .....            | 191 |
| 8.6.73 ALS audio format: MIME type definition .....             | 192 |
| 8.6.74 AAC audio format: baseline(9) .....                      | 192 |
| 8.6.75 AAC format profile: baseline .....                       | 193 |

|        |                                                                      |     |
|--------|----------------------------------------------------------------------|-----|
| 8.6.76 | AAC audio format profile: baseline.....                              | 194 |
| 8.6.77 | AAC audio format: Rendering Endpoint capabilities .....              | 194 |
| 8.6.78 | AAC audio format maximum system bit rate.....                        | 195 |
| 8.6.79 | AAC audio format: baseline .....                                     | 195 |
| 8.6.80 | AAC audio format: baseline .....                                     | 195 |
| 8.6.81 | AAC audio format: MIME type definition: ADTS .....                   | 196 |
| 8.6.82 | AAC audio format: MIME type definition: ISO.....                     | 196 |
| 8.6.83 | AAC audio format: MIME type definition.....                          | 196 |
| 8.6.84 | AAC audio format: ADTS audio interchange formats.....                | 197 |
| 8.6.85 | AAC audio format: MP4 audio interchange formats .....                | 197 |
| 8.6.86 | AAC audio format: 3GPP audio interchange formats .....               | 197 |
| 8.7    | WMA profiling guidelines .....                                       | 197 |
| 8.7.1  | General .....                                                        | 197 |
| 8.7.2  | WMA format .....                                                     | 198 |
| 8.7.3  | WMA format: Baseline profile .....                                   | 198 |
| 8.7.4  | WMA format: Full profile .....                                       | 199 |
| 8.7.5  | WMA format: Professional profile.....                                | 199 |
| 8.7.6  | WMA format: encapsulation file format for HTTP Media Transport ..... | 199 |
| 8.7.7  | WMA format: ASF operational procedures .....                         | 200 |
| 8.7.8  | WMA format: minimal implementation .....                             | 200 |
| 8.7.9  | WMA format: MIME type definition .....                               | 200 |
| 8.8    | DTS Digital Surround Profiling guidelines .....                      | 201 |
| 8.8.1  | DTS Digital Surround audio format .....                              | 201 |
| 8.8.2  | DTS Digital Surround audio format: MIME type definition.....         | 201 |
| 8.9    | DTS-HD Profiling guidelines .....                                    | 202 |
| 8.9.1  | DTS-HD High Resolution audio format.....                             | 202 |
| 8.9.2  | DTS-HD Master audio format.....                                      | 203 |
| 8.9.3  | DTS-HD LBR audio format.....                                         | 203 |
| 8.9.4  | DTS-HD audio format: MIME type definition.....                       | 204 |
| 8.10   | Enhanced AC-3 Profiling guidelines.....                              | 205 |
| 8.10.1 | Enhanced AC-3 audio format.....                                      | 205 |
| 8.10.2 | Enhanced AC-3 audio format: MIME type definition .....               | 206 |
| 8.11   | MLP Profiling guidelines .....                                       | 206 |
| 8.11.1 | MLP audio format .....                                               | 206 |
| 8.11.2 | MLP audio format: MIME type definition.....                          | 207 |
| 8.12   | MPEG-1/2 Profiling guidelines .....                                  | 207 |
| 8.12.1 | MPEG-1/2 Layer 2 audio format.....                                   | 207 |
| 8.12.2 | MPEG-1/2 Layer 2 audio format: MPS signaling .....                   | 208 |
| 8.12.3 | MPEG-1/2 Layer 2 audio format: MIME type definition .....            | 208 |
| 8.13   | WMA Lossless Profiling guidelines .....                              | 209 |
| 8.13.1 | WMA Lossless: stereo profile .....                                   | 209 |
| 8.13.2 | WMA Lossless: multichannel profile.....                              | 209 |
| 8.13.3 | WMA Lossless: MIME type definition .....                             | 209 |
| 9      | AV Media Class format profiles.....                                  | 210 |
| 9.1    | General .....                                                        | 210 |
| 9.2    | MPEG-1 Profiling guidelines .....                                    | 210 |
| 9.2.1  | MPEG-1 AV format: system portion profiling .....                     | 210 |
| 9.2.2  | MPEG-1 AV format: video portion profiling.....                       | 211 |
| 9.2.3  | MPEG-1 AV format: audio portion profiling .....                      | 211 |

|        |                                                                                                                                         |     |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------|-----|
| 9.2.4  | MPEG-1 AV format: MIME type definition .....                                                                                            | 212 |
| 9.3    | MPEG-2 Profiling guidelines .....                                                                                                       | 212 |
| 9.3.1  | MPEG -2 profiles .....                                                                                                                  | 212 |
| 9.3.2  | General format system-level guidelines .....                                                                                            | 214 |
| 9.3.3  | Format compression-level guidelines .....                                                                                               | 218 |
| 9.3.4  | General format guidelines for Transport Stream: MPEG-2 AV Format:<br>MPEG-2 MIME type definition .....                                  | 228 |
| 9.3.5  | Common format specific guidelines .....                                                                                                 | 228 |
| 9.3.6  | US region specific TS Profiling guidelines: MPEG_TS_SD_NA,<br>MPEG_TS_SD_NA_T, MPEG_TS_HD_NA, and MPEG_TS_HD_NA_T<br>Profiles .....     | 233 |
| 9.3.7  | Korean region specific TS Profiling guidelines: MPEG_TS_SD_KO,<br>MPEG_TS_SD_KO_T, MPEG_TS_HD_KO, and MPEG_TS_HD_KO_T<br>profiles ..... | 240 |
| 9.3.8  | DVB-European region specific TS Profiling guidelines<br>MPEG_TS_SD_EU and MPEG_TS_SD_EU_T profiles .....                                | 244 |
| 9.3.9  | Subset of DLNA profiles that use MPEG-2 MP@LL, MPEG-2 TS<br>encapsulation .....                                                         | 253 |
| 9.3.10 | AC-3 extension for AV format profiles .....                                                                                             | 255 |
| 9.3.11 | ES encapsulated MPEG-2 AV Stream for RTP .....                                                                                          | 257 |
| 9.3.12 | MPEG-2 AV format, system portion profile: PS_SD .....                                                                                   | 259 |
| 9.3.13 | MPEG-2 AV format, video portion profile: PS_SD .....                                                                                    | 259 |
| 9.3.14 | MPEG-2 AV format, system portion profile: PS_HD .....                                                                                   | 260 |
| 9.3.15 | MPEG-2 AV format, video portion profile: PS_HD .....                                                                                    | 261 |
| 9.3.16 | MPEG-2 AV format, audio portion profile: PS_SD_DTS, PS_HD_DTS .....                                                                     | 262 |
| 9.3.17 | MPEG-2 AV format, audio portion profile: PS_HD_DTSHD_HRA .....                                                                          | 262 |
| 9.3.18 | MPEG-2 AV format, audio portion profile: PS_HD_DTSHD_MA .....                                                                           | 263 |
| 9.3.19 | MPEG-2 AV format, audio portion profile: PS_HD_DTSHD .....                                                                              | 263 |
| 9.3.20 | MPEG-2 AV format, system portion profile: DIRECTV_SD .....                                                                              | 263 |
| 9.3.21 | MPEG-2 AV format, system portion profile: SD_EU .....                                                                                   | 264 |
| 9.3.22 | MPEG-2 AV format, system portion profile: SD_JP .....                                                                                   | 264 |
| 9.3.23 | MPEG-2 AV format, system portion profile: HD_NA .....                                                                                   | 264 |
| 9.3.24 | MPEG-2 AV format, system portion profile: TS_HD_DTS .....                                                                               | 265 |
| 9.3.25 | MPEG-2 AV Format, MPEG-2 Video Format: DIRECTV_SD .....                                                                                 | 265 |
| 9.3.26 | MPEG-2 AV format, MPEG-2 video format: SD_JP .....                                                                                      | 266 |
| 9.3.27 | MPEG-2 AV format, MPEG-2 video format: TS_HD_DTS .....                                                                                  | 267 |
| 9.3.28 | MPEG-2 AV format, audio portion profile: MPEG1_L2 .....                                                                                 | 267 |
| 9.3.29 | MPEG-2 AV format, audio portion profile: MPEG1_L2 .....                                                                                 | 268 |
| 9.3.30 | MPEG-2 AV format, audio portion profile: MPEG1_L2 .....                                                                                 | 269 |
| 9.3.31 | MPEG-2 AV format, audio portion profile: AC3 .....                                                                                      | 269 |
| 9.3.32 | MPEG-2 AV format, audio portion profile: AC3 .....                                                                                      | 270 |
| 9.3.33 | MPEG-2 AV format, audio portion profile: TS_HD_DTS .....                                                                                | 270 |
| 9.3.34 | MPEG-2 AV format, audio portion profile: TS_HD_DTSHD_HRA .....                                                                          | 270 |
| 9.3.35 | MPEG-2 AV format, audio portion profile: TS_HD_DTSHD_MA .....                                                                           | 271 |
| 9.3.36 | MPEG-2 AV format, MIME type definition: DIRECTV_SD .....                                                                                | 271 |
| 9.3.37 | MPEG-2 AV format: system stream specification .....                                                                                     | 271 |
| 9.3.38 | MPEG-2 AV format: Transport Alignment Position .....                                                                                    | 272 |
| 9.3.39 | MPEG-2 AV format: video portion profiling .....                                                                                         | 273 |
| 9.3.40 | MPEG-2 AV format: MPEG-2 video format .....                                                                                             | 273 |
| 9.3.41 | MPEG-2 AV format: video format .....                                                                                                    | 274 |

|        |                                                                         |     |
|--------|-------------------------------------------------------------------------|-----|
| 9.3.42 | MPEG-2 AV format: audio portion profiling: MPEG-1 L2.....               | 275 |
| 9.3.43 | MPEG-2 AV format: audio portion profiling: AC-3.....                    | 275 |
| 9.3.44 | MPEG-2 AV format: MIME type definition .....                            | 276 |
| 9.3.45 | MPEG-2 AV format: system stream specification .....                     | 277 |
| 9.3.46 | MPEG-2 AV format: Transport Alignment Position .....                    | 278 |
| 9.3.47 | MPEG-2 AV format: video portion profiling.....                          | 278 |
| 9.3.48 | MPEG-2 AV format: video portion profiling.....                          | 279 |
| 9.3.49 | MPEG-2 AV format: video format .....                                    | 279 |
| 9.3.50 | MPEG-2 AV format: audio portion profiling: MPEG-1 L2.....               | 279 |
| 9.3.51 | MPEG-2 AV format: MIME type definition .....                            | 280 |
| 9.3.52 | MPEG-2 AV format: MIME type definition .....                            | 280 |
| 9.3.53 | MPEG-2 AV format: system stream specification .....                     | 281 |
| 9.3.54 | MPEG-2 AV format: Transport Alignment Position .....                    | 281 |
| 9.3.55 | MPEG-2 AV format: video portion profiling.....                          | 282 |
| 9.3.56 | MPEG-2 AV format: audio portion profiling: MPEG-2 AAC .....             | 283 |
| 9.3.57 | MPEG-2 AV format: MIME type definition .....                            | 284 |
| 9.3.58 | MPEG-2 AV format: system portion profile: TS_HD_X .....                 | 285 |
| 9.3.59 | MPEG-2 AV format: Transport Alignment Position: TS_HD_X .....           | 286 |
| 9.3.60 | MPEG-2 AV format: video portion profile: MPEG_TS_HD .....               | 286 |
| 9.3.61 | MPEG-2 AV format: video format: MPEG_TS_HD_X_60 .....                   | 287 |
| 9.3.62 | MPEG-2 AV format: video format: MPEG_TS_HD_X_50 .....                   | 287 |
| 9.3.63 | MPEG-2 AV format: audio portion profile: L2 .....                       | 287 |
| 9.3.64 | MPEG-2 AV format: MIME type definition: TS_T .....                      | 288 |
| 9.3.65 | MPEG-2 AV format: MIME type definition: TS_ISO .....                    | 288 |
| 9.3.66 | MPEG-2 AV format: system portion profile, DIRECTV_SD .....              | 289 |
| 9.3.67 | MPEG-2 AV format: video portion profile, DIRECTV_SD .....               | 289 |
| 9.3.68 | MPEG-2 AV format: audio portion profile, DIRECTV_SD_MPEG1_L2 .....      | 291 |
| 9.3.69 | MPEG-2 AV format: MIME type definition, DIRECTV_SD .....                | 292 |
| 9.3.70 | MPEG-2 AV format: system portion profile, TS_NA .....                   | 292 |
| 9.3.71 | MPEG-2 AV format: video portion profile, TS_NA_ISO .....                | 294 |
| 9.3.72 | MPEG-2 AV format: audio portion profile, TS_NA_ISO .....                | 295 |
| 9.3.73 | MPEG-2 AV format: system portion profile,<br>TS_SD_DTS, TS_HD_DTS ..... | 296 |
| 9.3.74 | MPEG-2 AV format: video portion profile, TS_SD_DTS .....                | 297 |
| 9.3.75 | MPEG-2 AV format: video portion profile, TS_HD_DTS .....                | 298 |
| 9.3.76 | MPEG-2 AV format: audio portion profile, TS_DTS .....                   | 298 |
| 9.3.77 | MPEG-2 AV format: system portion profile, TS_SD_EU_DTS .....            | 299 |
| 9.3.78 | MPEG-2 AV format: video portion profile, TS_SD_EU_DTS .....             | 299 |
| 9.3.79 | MPEG-2 AV format: audio portion profile, TS_SD_EU_DTS .....             | 299 |
| 9.3.80 | MPEG-2 AV format: MIME type definition, TS_ISO .....                    | 300 |
| 9.4    | MPEG-4 Part 2 profiling guidelines .....                                | 300 |
| 9.4.1  | General .....                                                           | 300 |
| 9.4.2  | MPEG-4 Part 2 video portion profiles .....                              | 303 |
| 9.4.3  | MPEG-4 Part2 audio portion profiles .....                               | 317 |
| 9.4.4  | MPEG-4 Part2 system portion profiles .....                              | 325 |
| 9.4.5  | MPEG-4 Part 2 AV ormat, video portion profile: H263_P0_L45 .....        | 334 |
| 9.4.6  | MPEG-4 Part 2 AV format, video portion profile: SP_L3_VGA_QHD .....     | 334 |
| 9.4.7  | MPEG-4 Part 2 AV format, video portion profile: SP_L6 .....             | 335 |
| 9.4.8  | MPEG-4 Part 2 AV format, video portion profile: MP4_NDS .....           | 335 |

|        |                                                                                                 |     |
|--------|-------------------------------------------------------------------------------------------------|-----|
| 9.4.9  | MPEG-4 Part 2 AV format, audio portion profile: AAC .....                                       | 336 |
| 9.4.10 | MPEG-4 Part 2 AV format, audio portion profile: AAC_LTP .....                                   | 337 |
| 9.4.11 | MPEG-4 Part 2 AV format, audio portion profile: HEAAC_L2 .....                                  | 337 |
| 9.4.12 | MPEG-4 Part 2 AV format, audio portion profile: HEAACv2_L2 .....                                | 337 |
| 9.4.13 | MPEG-4 Part 2 AV format, audio portion profile: HEAACv2_L2 .....                                | 338 |
| 9.4.14 | MPEG-4 Part 2 AV format, audio portion profile: AMR_WBplus .....                                | 338 |
| 9.4.15 | MPEG-4 Part 2 AV format, audio portion profile: NDSD .....                                      | 338 |
| 9.4.16 | MPEG-4 Part 2 AV format, system portion profile: MP4 .....                                      | 338 |
| 9.4.17 | MPEG-4 Part 2 AV format, system portion profile: 3GPP .....                                     | 339 |
| 9.4.18 | MPEG-4 Part 2 AV format, system portion profile: system bit rate .....                          | 339 |
| 9.4.19 | MPEG-4 Part 2 AV format, system portion profile: system bit rate .....                          | 340 |
| 9.4.20 | MPEG-4 Part 2 AV format, system portion profile: system bit rate .....                          | 340 |
| 9.4.21 | MPEG-4 Part 2: AV format, system portion profile: MP4_SP_VGA_res<br>.....                       | 340 |
| 9.4.22 | MPEG-4 Part 2: AV format, system portion profile: MP4_SP_L6 .....                               | 341 |
| 9.4.23 | MPEG-4 Part 2: AV format, system portion profile: MP4_NDSD .....                                | 341 |
| 9.4.24 | MPEG-4 Part 2 AV format, MIME type definition: MP4 .....                                        | 342 |
| 9.4.25 | MPEG-4 Part 2 AV format, MIME type definition: 3GPP .....                                       | 342 |
| 9.4.26 | MPEG-4 Part 2 AV format: video portion profile: H263_P0_L45 .....                               | 343 |
| 9.4.27 | MPEG-4 Part 2 AV format, video portion profile: H263_P0_L10 .....                               | 344 |
| 9.4.28 | MPEG-4 Part 2 AV format, video portion profile: H263_P0_L45 .....                               | 344 |
| 9.4.29 | MPEG-4 Part 2 AV format, audio portion profile: AMR .....                                       | 345 |
| 9.4.30 | MPEG-4 Part 2 AV format, audio portion profile: AMR_WBplus .....                                | 345 |
| 9.4.31 | MPEG-4 Part 2 AV format, audio portion profile: 3GPP .....                                      | 345 |
| 9.4.32 | MPEG-4 Part 2 AV format, system portion profile: system bit rates .....                         | 345 |
| 9.4.33 | MPEG-4 Part 2 AV format, system portion profile: system bit rates .....                         | 346 |
| 9.4.34 | MPEG-4 Part 2 AV format, system portion profile:<br>MIME type definition .....                  | 346 |
| 9.4.35 | MPEG-4 Part 2 AV format, video portion profile: SP_L5 .....                                     | 346 |
| 9.4.36 | MPEG-4 Part 2 AV format, system portion profile .....                                           | 348 |
| 9.4.37 | MPEG-4 Part 2 AV format, audio portion profile .....                                            | 348 |
| 9.4.38 | MPEG-4 Part 2 AV format, MIME type definition .....                                             | 349 |
| 9.5    | MPEG-4 Part 10 (AVC) profiling guidelines .....                                                 | 349 |
| 9.5.1  | General .....                                                                                   | 349 |
| 9.5.2  | Subset of DLNA profiles for AVC MP @ L3, SD resolutions, MPEG-2<br>TS encapsulation .....       | 358 |
| 9.5.3  | Subset of DLNA profiles for AVC MP@L4, HD resolutions, and<br>MPEG-2 TS encapsulation .....     | 364 |
| 9.5.4  | Subset of DLNA profiles for AVC BP @ L3, SD resolutions, MP4<br>encapsulation .....             | 369 |
| 9.5.5  | Subset of DLNA profiles for AVC BP @ L2 , CIF30 resolutions, MPEG-2<br>TS encapsulation .....   | 372 |
| 9.5.6  | Subset of DLNA profiles for AVC BP @ L1.2, CIF 15 resolutions,<br>MPEG-2 TS encapsulation ..... | 377 |
| 9.5.7  | Subset of DLNA profiles for AVC BP@ L2, CIF30 resolutions, MP4<br>encapsulation .....           | 382 |
| 9.5.8  | Subset of DLNA profiles for AVC BP@ L1.2, CIF15 resolutions,<br>MPEG-2 TS encapsulation .....   | 388 |
| 9.5.9  | Subset of DLNA profiles for AVC BP@ L1.2 , CIF15 resolutions, MP4<br>encapsulation .....        | 393 |

|        |                                                                                                   |     |
|--------|---------------------------------------------------------------------------------------------------|-----|
| 9.5.10 | Subset of DLNA profiles for AVC BP@ L1b, QCIF15 resolutions, MP4 encapsulation .....              | 398 |
| 9.5.11 | Subset of DLNA profiles for AVC MP@ L3, SD resolutions, MP4 encapsulation .....                   | 400 |
| 9.5.12 | Subset of DLNA profiles for AVC BP, QCIF15, CIF15, and CIF30 resolutions 3GPP encapsulation ..... | 405 |
| 9.5.13 | Audio portion profiling for MPEG-4 Part 10 (AVC) profiles .....                                   | 409 |
| 9.5.14 | MPEG-4 Part 10 AV format, system portion profile: PS_HD .....                                     | 417 |
| 9.5.15 | MPEG-4 Part 10 AV format, video portion profile: PS_HD .....                                      | 417 |
| 9.5.16 | MPEG-4 Part 10 AV format, audio portion profile: PS_HD_DTS .....                                  | 418 |
| 9.5.17 | MPEG-4 Part 10 AV format, audio portion profile:<br>PS_HD_DTSHD_HRA .....                         | 419 |
| 9.5.18 | MPEG-4 Part 10 AV format, audio portion profile:<br>PS_HD_DTSHD_MA .....                          | 419 |
| 9.5.19 | MPEG-4 Part 10 AV format, audio portion profile: PS_HD_DTSHD .....                                | 419 |
| 9.5.20 | MPEG-4 Part 10 AV format, system portion profile:<br>TS_MP_SD_EAC3 .....                          | 420 |
| 9.5.21 | MPEG-4 Part 10 AV format, system portion profile:<br>TS_HP_SD_MPEG1_L2 .....                      | 420 |
| 9.5.22 | MPEG-4 Part 10 AV format, system portion profile: TS_HP_SD_AC3 .....                              | 421 |
| 9.5.23 | MPEG-4 Part 10 AV format, system portion profile:<br>TS_HP_SD_EAC3 .....                          | 421 |
| 9.5.24 | MPEG-4 Part 10 AV format, system portion profile: TS_SD_EU .....                                  | 422 |
| 9.5.25 | MPEG-4 Part 10 AV format, video portion profile: TS_HP_SD .....                                   | 422 |
| 9.5.26 | MPEG-4 Part 10 AV format, video portion profile: TS_SD_EU .....                                   | 423 |
| 9.5.27 | MPEG-4 Part 10 AV format, system portion profile:<br>TS_MP_HD_EAC3 .....                          | 424 |
| 9.5.28 | MPEG-4 Part 10 AV format, system portion profile:<br>TS_HP_HD_MPEG1_L2 .....                      | 425 |
| 9.5.29 | MPEG-4 Part 10 AV format, system portion profile: TS_HP_HD_AC3 .....                              | 425 |
| 9.5.30 | MPEG-4 Part 10 AV format, system portion profile:<br>TS_HP_HD_EAC3 .....                          | 426 |
| 9.5.31 | MPEG-4 Part 10 AV format, system portion profile: TS_HD_EU .....                                  | 426 |
| 9.5.32 | MPEG-4 Part 10 AV format, system portion profile: TS_JP .....                                     | 427 |
| 9.5.33 | MPEG-4 Part 10 AV format, system portion profile:<br>TS_HD_60, TS_HD_50, TS_HD_24 .....           | 427 |
| 9.5.34 | MPEG-4 Part 10 AV format, system portion profile: TS_HD_DTS .....                                 | 428 |
| 9.5.35 | MPEG-4 Part 10 AV format, video portion profile: TS_MP_HD .....                                   | 428 |
| 9.5.36 | MPEG-4 Part 10 AV format, video portion profile: TS_HP_HD .....                                   | 429 |
| 9.5.37 | MPEG-4 Part 10 AV format, video portion profile: TS_HD_EU .....                                   | 430 |
| 9.5.38 | MPEG-4 Part 10 AV format, video portion profile: TS_JP .....                                      | 431 |
| 9.5.39 | MPEG-4 Part 10 AV format, video portion profile: TS_HD_60 .....                                   | 432 |
| 9.5.40 | MPEG-4 Part 10 AV format, video portion profile: TS_HD_50 .....                                   | 433 |
| 9.5.41 | MPEG-4 Part 10 AV format, video portion profile: TS_HD_24 .....                                   | 434 |
| 9.5.42 | MPEG-4 Part 10 AV format, video portion profile: TS_HD_DTS .....                                  | 435 |
| 9.5.43 | MPEG-4 Part 10 AV format: Transport Alignment Element .....                                       | 436 |
| 9.5.44 | MPEG-4 Part 10 AV format: Decoder Friendly Alignment Position .....                               | 436 |
| 9.5.45 | MPEG-4 Part 10 AV format, system portion profile:<br>MP4_MP_HD_720p_AAC .....                     | 437 |
| 9.5.46 | MPEG-4 Part 10 AV format, system portion profile: MP4_MP_HD .....                                 | 437 |
| 9.5.47 | MPEG-4 Part 10 AV format, system portion profile: MP4_HP_HD .....                                 | 438 |
| 9.5.48 | MPEG-4 Part 10 AV format, system portion profile: MP4_NDHD .....                                  | 438 |

|        |                                                                                     |     |
|--------|-------------------------------------------------------------------------------------|-----|
| 9.5.49 | MPEG-4 Part 10 AV format, system portion profile: MPS Transport and Signaling ..... | 439 |
| 9.5.50 | MPEG-4 Part 10 AV format, video portion profile: MP4_BL_L12_CIF15.....              | 439 |
| 9.5.51 | MPEG-4 Part 10 AV format, video portion profile: MP4_MP_HD_720p_AAC .....           | 440 |
| 9.5.52 | MPEG-4 Part 10 AV format, video portion profile: MP4_MP_HD_1080i_AAC.....           | 441 |
| 9.5.53 | MPEG-4 Part 10 AV format, video portion profile: MP4_MP_HD .....                    | 442 |
| 9.5.54 | MPEG-4 Part 10 AV format, video portion profile: MP4_HP_HD .....                    | 442 |
| 9.5.55 | MPEG-4 Part 10 AV format, video portion profile: MP4_NDHD .....                     | 443 |
| 9.5.56 | MPEG-4 Part 10 AV format, system portion profile: 3GPP_BL_L12_CIF15 .....           | 443 |
| 9.5.57 | MPEG-4 Part 10 AV format, video portion profile: 3GPP_BL_L12_CIF15 .....            | 444 |
| 9.5.58 | MPEG-4 Part 10 AV format, audio portion profile: MPEG-2 AAC .....                   | 444 |
| 9.5.59 | MPEG-4 Part 10 AV format, audio portion profile: AAC .....                          | 444 |
| 9.5.60 | MPEG-4 Part 10 AV format, audio portion profile: HEAAC_MULT5 .....                  | 445 |
| 9.5.61 | MPEG-4 Part 10 AV format, audio portion profile: AAC_LTP.....                       | 445 |
| 9.5.62 | MPEG-4 Part 10 AV format, audio portion profile: AAC_MPS.....                       | 445 |
| 9.5.63 | MPEG-4 Part 10 AV format, audio portion profile: HEAAC_L2 .....                     | 445 |
| 9.5.64 | MPEG-4 Part 10 AV format, audio portion profile: HEAAC_MPS .....                    | 446 |
| 9.5.65 | MPEG-4 Part 10 AV format, audio portion profile: HEAAC_L4 .....                     | 446 |
| 9.5.66 | MPEG-4 Part 10 AV format, audio portion profile: HEAAC_MULT7 .....                  | 446 |
| 9.5.67 | MPEG-4 Part 10 AV format, audio portion profile: HEAACv2_L2 .....                   | 446 |
| 9.5.68 | MPEG-4 Part 10 AV format, audio portion profile: AC3 .....                          | 447 |
| 9.5.69 | MPEG-4 Part 10 AV format, audio portion profile: AC3 .....                          | 448 |
| 9.5.70 | MPEG-4 Part 10 AV format, audio portion profile: AC3 .....                          | 448 |
| 9.5.71 | MPEG-4 Part 10 AV format, audio portion profile: AC3 .....                          | 448 |
| 9.5.72 | MPEG-4 Part 10 AV format, audio portion profile: AMR_WBplus.....                    | 449 |
| 9.5.73 | MPEG-4 Part 10 AV format, audio portion profile: TS_HD_DTS .....                    | 449 |
| 9.5.74 | MPEG-4 Part 10 AV format, audio Portion Profile: TS_HD_DTSHD_HRA.....               | 449 |
| 9.5.75 | MPEG-4 Part 10 AV Format, Audio Portion Profile: TS_HD_DTSHD_MA.....                | 450 |
| 9.5.76 | MPEG-4 Part 10 AV format, audio portion profile: EAC3 .....                         | 450 |
| 9.5.77 | MPEG-4 Part 10 AV format, audio portion profile: MPEG1_L2 .....                     | 451 |
| 9.5.78 | MPEG-4 Part 10 AV format, audio portion profile: MPEG-1/2 .....                     | 451 |
| 9.5.79 | MPEG-4 Part 10 AV format, video portion profiling: HP_HD_L4 .....                   | 452 |
| 9.5.80 | MPEG-4 Part 10 AV format, video portion profiling: HP_SD_L3 .....                   | 454 |
| 9.5.81 | MPEG-4 Part 10 AV format, audio portion profiling: HEAACv2_L4 .....                 | 455 |
| 9.5.82 | MPEG-4 Part 10 AV format, MIME type definition .....                                | 456 |
| 9.5.83 | MPEG-4 Part 10 AV format, MIME type definition .....                                | 457 |
| 9.5.84 | MPEG-4 Part 10 AV format, MIME type definition .....                                | 457 |
| 9.5.85 | MPEG-4 Part 10 AV format, MIME type definition .....                                | 457 |
| 9.5.86 | MPEG-4 Part 10 AV Format, AVC_TS_HP_HD_HEAACv2_L4_T .....                           | 457 |
| 9.5.87 | MPEG-4 Part 10 AV format, AVC_TS_HP_HD_HEAACv2_L4_ISO .....                         | 458 |
| 9.5.88 | MPEG-4 Part 10 AV format, system portion profile .....                              | 458 |
| 9.5.89 | MPEG-4 Part 10 AV format, AVC_TS_HP_SD_HEAACv2_L4_T .....                           | 458 |
| 9.5.90 | MPEG-4 Part 10 AV format, AVC_TS_HP_SD_HEAACv2_L4_ISO.....                          | 459 |
| 9.5.91 | MPEG-4 Part 10 AV format, AVC_MP4_HP_SD_HEAACv2_L4.....                             | 459 |

|         |                                                                                        |     |
|---------|----------------------------------------------------------------------------------------|-----|
| 9.5.92  | MPEG-4 Part 10 AV format, AVC_MP4_BL_CIF15_HEAACv2_L2.....                             | 459 |
| 9.5.93  | MPEG-4 Part 10 AV format, video portion profile .....                                  | 459 |
| 9.5.94  | MPEG-4 Part 10 AV format, audio portion profile .....                                  | 460 |
| 9.5.95  | MPEG-4 Part 10 AV format, AVC_MP4_BL_CIF30_HEAACv2_L2.....                             | 460 |
| 9.5.96  | MPEG-4 Part 10 AV format, video portion profile .....                                  | 461 |
| 9.5.97  | MPEG-4 Part 10 AV format,<br>AVC_3GPP_BL_CIF15_AMR_WBplus_res .....                    | 461 |
| 9.5.98  | MPEG-4 Part 10 AV format,<br>AVC_3GPP_BL_CIF30_AMR_WBplus_res .....                    | 462 |
| 9.5.99  | MPEG-4 Part 10 AV format, video portion profiling .....                                | 462 |
| 9.5.100 | MPEG-4 Part 10 AV format, audio portion profiling: AMR.....                            | 462 |
| 9.5.101 | MPEG-4 Part 10 AV format, audio portion profiling: AMR_WBplus .....                    | 463 |
| 9.5.102 | MPEG-4 Part 10 AV format, system portion profile .....                                 | 463 |
| 9.5.103 | MPEG-4 Part 10 AV format, system bit rate .....                                        | 463 |
| 9.5.104 | MPEG-4 Part 10 AV format: MIME type definition .....                                   | 463 |
| 9.5.105 | MPEG-4 Part 10 AV format: system portion profile: TS_HD_T .....                        | 464 |
| 9.5.106 | MPEG-4 Part 10 AV format: system portion profile:<br>MP4_BL_L12_CIF15_HEAACv2_350..... | 464 |
| 9.5.107 | MPEG-4 Part 10 AV format: system portion profile:<br>MP4_BL_CIF15_AAC_350.....         | 465 |
| 9.5.108 | MPEG-4 Part 10 AV format: MP4_BL_CIF15_HEAAC_350 .....                                 | 465 |
| 9.5.109 | MPEG-4 Part 10 AV format: system portion profile:<br>MP4_MP_SD_AAC_LC .....            | 466 |
| 9.5.110 | MPEG-4 Part 10 AV format: system portion profile: MP4_BL_L31_HD .....                  | 466 |
| 9.5.111 | MPEG-4 Part 10 AV format: MP4_BL_L32_HD .....                                          | 466 |
| 9.5.112 | MPEG-4 Part 10 AV format: video portion profile: BL_L12_CIF15 .....                    | 467 |
| 9.5.113 | MPEG-4 Part 10 AV format: video portion profile: BL_CIF15.....                         | 467 |
| 9.5.114 | MPEG-4 Part 10 AV format: video portion profile: BL_CIF15.....                         | 468 |
| 9.5.115 | MPEG-4 Part 10 AV format: video portion profile: MP_SD .....                           | 469 |
| 9.5.116 | MPEG-4 Part 10 AV format: video portion profile: BL_L31_HD .....                       | 469 |
| 9.5.117 | MPEG-4 Part 10 AV format: video portion profile: BL_L32_HD .....                       | 470 |
| 9.5.118 | MPEG-4 Part 10 AV format: audio portion profile: AAC .....                             | 470 |
| 9.5.119 | MPEG-4 Part 10 AV format: audio portion profile: AAC_LC.....                           | 470 |
| 9.5.120 | MPEG-4 Part 10 AV format: audio portion profile: AAC_350 .....                         | 471 |
| 9.5.121 | MPEG-4 Part 10 AV format: audio portion profile: HEAAC_350.....                        | 471 |
| 9.5.122 | MPEG-4 Part 10 AV format: audio portion profile: HEAACv2_350 .....                     | 471 |
| 9.5.123 | MPEG-4 Part 10 AV format: audio portion profile: AC3_X .....                           | 472 |
| 9.5.124 | MPEG-4 Part 10 AV format: audio portion profile: LPCM .....                            | 472 |
| 9.5.125 | MPEG-4 Part 10 AV format: MIME type definition: TS_T.....                              | 473 |
| 9.5.126 | MPEG-4 Part 10 AV format: MIME type definition: MP4 .....                              | 474 |
| 9.5.127 | MPEG-4 Part 10 AV format: system portion profile, TS_NA .....                          | 474 |
| 9.5.128 | MPEG-4 Part 10 AV format: video portion profile, TS_NA .....                           | 476 |
| 9.5.129 | MPEG-4 Part 10 AV format: audio portion profile, TS_NA .....                           | 478 |
| 9.5.130 | MPEG-4 Part 10 AV format: system portion profile, TS_EU_ISO.....                       | 480 |
| 9.5.131 | MPEG-4 Part 10 AV format: video portion profile, TS_EU_ISO .....                       | 482 |
| 9.5.132 | MPEG-4 Part 10 AV format: audio portion profile, TS_EU_ISO .....                       | 484 |
| 9.5.133 | MPEG-4 Part 10 AV format: system portion profile,<br>TS_MP_SD_DTS(HD).....             | 484 |
| 9.5.134 | MPEG-4 Part 10 AV format: video portion profile,<br>TS_MP_SD_DTS(HD).....              | 485 |



|                                                                                            |     |
|--------------------------------------------------------------------------------------------|-----|
| 9.5.135MPEG-4 Part 10 AV format: system portion profile,<br>TS_HP_HD_(L41)_DTS(HD).....    | 486 |
| 9.5.136MPEG-4 Part 10 AV format: video portion profile,<br>TS_HP_HD_DTS(HD).....           | 487 |
| 9.5.137MPEG-4 Part 10 AV format: video portion profile,<br>TS_HP_HD_L41_DTS .....          | 487 |
| 9.5.138MPEG-4 Part 10 AV format: audio portion profile, TS_DTS .....                       | 488 |
| 9.5.139MPEG-4 Part 10 AV format: audio portion profile, TS_DTSHD .....                     | 488 |
| 9.5.140MPEG-4 Part 10 AV format: system portion profile, TS_SD_EU_DTS .....                | 489 |
| 9.5.141MPEG-4 Part 10 AV format: video portion profile, TS_SD_EU_DTS .....                 | 489 |
| 9.5.142MPEG-4 Part 10 AV format: audio portion profile, TS_SD_EU_DTS .....                 | 489 |
| 9.5.143MPEG-4 Part 10 AV format: system portion profile, TS_HD_EU_DTS .....                | 490 |
| 9.5.144MPEG-4 Part 10 AV format: video portion profile, TS_HD_EU_DTS .....                 | 490 |
| 9.5.145MPEG-4 Part 10 AV format: audio portion profile, TS_HD_EU_DTS .....                 | 490 |
| 9.5.146MPEG-4 Part 10 AV format: system portion profile, TS_SHP_HD_EU .....                | 491 |
| 9.5.147MPEG-4 Part 10 AV format: video portion profile, TS_SHP_HD_EU .....                 | 491 |
| 9.5.148MPEG-4 Part 10 AV format: audio portion profile,<br>TS_SHP_HD_EU_AC3 .....          | 492 |
| 9.5.149MPEG-4 Part 10 AV format: audio portion profile,<br>TS_SHP_HD_EU_HEAACv2_L4 .....   | 493 |
| 9.5.150MPEG-4 Part 10 AV format: MIME type definition, TS_T .....                          | 493 |
| 9.5.151MPEG-4 Part 10 AV format: MIME type definition, TS_ISO .....                        | 493 |
| 9.5.152MPEG-4 Part 10 AV format: system portion profile, MP4_EU .....                      | 494 |
| 9.5.153MPEG-4 Part 10 AV format: video portion profile, MP4_EU .....                       | 494 |
| 9.5.154MPEG-4 Part 10 AV format: audio portion profile, MP4_EU .....                       | 495 |
| 9.5.155MPEG-4 Part 10 AV format: system portion profile, MP4_DTS,<br>MP4_DTSHD .....       | 496 |
| 9.5.156MPEG-4 Part 10 AV format: video portion profile, MP4_BL_DTS,<br>MP4_BL_DTSHD .....  | 497 |
| 9.5.157MPEG-4 Part 10 AV format: video portion profile, MP4_MP_DTS,<br>MP4_MP_DTSHD .....  | 497 |
| 9.5.158MPEG-4 Part 10 AV format: video portion profile, MP4_HP_DTS,<br>MP4_HP_DTSHD .....  | 498 |
| 9.5.159MPEG-4 Part 10 AV format: audio portion profile, MP4_DTS .....                      | 498 |
| 9.5.160MPEG-4 Part 10 AV format: audio portion profile, MP4_DTSHD .....                    | 499 |
| 9.5.161MPEG-4 Part 10 AV format: system portion profile,<br>MP4_MP_SD_EAC3 .....           | 499 |
| 9.5.162MPEG-4 Part 10 AV format: video portion profile,<br>HP4_MP_SD_EAC3.....             | 500 |
| 9.5.163MPEG-4 Part 10 AV format: audio portion profile, MP4_MP_SD_EAC3<br>.....            | 501 |
| 9.5.164MPEG-4 Part 10 AV format: system portion profile,<br>MP4_HP_HD_EAC3 .....           | 501 |
| 9.5.165MPEG-4 Part 10 AV format: video portion profile,<br>HP4_HP_HD_EAC3.....             | 502 |
| 9.5.166MPEG-4 Part 10 AV format: audio portion profile,<br>MP4_HP_HD_EAC3 .....            | 503 |
| 9.5.167MPEG-4 Part 10 AV format: audio portion profile,<br>MIME type definition, MP4 ..... | 504 |
| 9.5.168MPEG-4 Part 10 AV format: system portion profile, MKV_MP_HD .....                   | 505 |
| 9.5.169MPEG-4 Part 10 AV format: video portion profile, MKV_MP_HD .....                    | 505 |
| 9.5.170MPEG-4 Part 10 AV format: system portion profile, MKV_HP_HD .....                   | 506 |

|         |                                                                                  |     |
|---------|----------------------------------------------------------------------------------|-----|
| 9.5.171 | MPEG-4 Part 10 AV format: video portion profile, MKV_HP_HD .....                 | 506 |
| 9.5.172 | MPEG-4 Part 10 AV format: audio portion profile,<br>MKV_HD_ACC_MULT5 .....       | 507 |
| 9.5.173 | MPEG-4 Part 10 AV format: audio portion profile,<br>MKV_HD_HEAAC_L4 .....        | 507 |
| 9.5.174 | MPEG-4 Part 10 AV format: audio portion profile, MKV_HD_AC3 .....                | 508 |
| 9.5.175 | MPEG-4 Part 10 AV format: audio portion profile,<br>MKV_HD_MPEG1_L3 .....        | 508 |
| 9.5.176 | MPEG-4 Part 10 AV format: MIME type definition, MKV .....                        | 509 |
| 9.6     | WMV9 profiling guidelines .....                                                  | 509 |
| 9.6.1   | General .....                                                                    | 509 |
| 9.6.2   | WMV AV format .....                                                              | 510 |
| 9.6.3   | WMV AV format: Medium Resolution Video with Baseline Audio .....                 | 510 |
| 9.6.4   | WMV AV format: Medium Resolution Video with Full Audio .....                     | 510 |
| 9.6.5   | WMV AV format: Medium Resolution Video with Professional Audio .....             | 511 |
| 9.6.6   | WMV AV format: High Resolution Video with Full Audio .....                       | 511 |
| 9.6.7   | WMV AV format: High Resolution Video with Professional Audio .....               | 512 |
| 9.6.8   | WMV AV format: HighMAT Profile .....                                             | 512 |
| 9.6.9   | WMV AV format: Simple Profile at Medium Level with WMA .....                     | 512 |
| 9.6.10  | WMV AV format: Simple Profile at Medium Level with MP3 .....                     | 513 |
| 9.6.11  | WMV AV format: Simple Profile at Low Level with WMA .....                        | 513 |
| 9.6.12  | WMV AV format: ASF encapsulation and multiplex format for HTTP<br>transfer ..... | 514 |
| 9.6.13  | WMV AV format: ASF operational procedures .....                                  | 514 |
| 9.6.14  | WMV AV format: discovery of WMV version .....                                    | 515 |
| 9.6.15  | WMV AV format: minimal implementation .....                                      | 515 |
| 9.6.16  | WMV AV format: MIME type definition .....                                        | 516 |
| 9.7     | VC-1 profiling guidelines .....                                                  | 516 |
| 9.7.1   | VC-1 AV format, system portion profile: PS_HD .....                              | 516 |
| 9.7.2   | VC-1 AV format, video portion profile: PS_HD .....                               | 517 |
| 9.7.3   | VC-1 AV format, audio portion profile: PS_HD_DTS .....                           | 518 |
| 9.7.4   | VC-1 AV format, audio portion profile: PS_HD_DTSHD_HRA .....                     | 518 |
| 9.7.5   | VC-1 AV format, audio portion profile: PS_HD_DTSHD_MA .....                      | 518 |
| 9.7.6   | VC-1 AV format, audio portion profile: PS_HD_DTSHD .....                         | 519 |
| 9.7.7   | VC-1 AV format, MIME type definition: PS_HD .....                                | 519 |
| 9.7.8   | VC-1 AV format, system portion profile: TS_AP .....                              | 519 |
| 9.7.9   | VC-1 AV format, system portion profile: TS_HD .....                              | 520 |
| 9.7.10  | VC-1 AV format, system portion profile: ASF_AP .....                             | 521 |
| 9.7.11  | VC-1 AV format: video portion profile: AP_L1 .....                               | 521 |
| 9.7.12  | VC-1 AV format, video portion profile: TS_HD .....                               | 522 |
| 9.7.13  | VC-1 AV format: video portion profile: AP_L2 .....                               | 523 |
| 9.7.14  | VC-1 AV format: audio portion profile: AC3 .....                                 | 523 |
| 9.7.15  | VC-1 AV format: audio portion profile: TS_HD_DTS .....                           | 523 |
| 9.7.16  | VC-1 AV format: audio portion profile: TS_HD_DTSHD_HRA .....                     | 524 |
| 9.7.17  | VC-1 AV format, audio portion profile: TS_HD_DTSHD_MA .....                      | 524 |
| 9.7.18  | VC-1 AV format: audio portion profile: WMA .....                                 | 525 |
| 9.7.19  | VC-1 AV format, MIME type definition: TS, TS_T .....                             | 525 |
| 9.7.20  | VC-1 AV format, MIME type definition: TS_ISO .....                               | 525 |
| 9.7.21  | VC-1 AV format: system portion profile .....                                     | 526 |
| 9.7.22  | VC-1 AV format: video portion profile: Adaptive AP_L2 .....                      | 526 |

|                                                                                              |     |
|----------------------------------------------------------------------------------------------|-----|
| 9.7.23 VC-1 AV format: audio portion profile: WMA .....                                      | 527 |
| 9.7.24 VC-1 AV Format, MIME Type Definition: ASF .....                                       | 527 |
| 10 Printing Class Media Format Profiles .....                                                | 527 |
| 10.1 General .....                                                                           | 527 |
| 10.2 Generic Printing profiling guidelines MF Printing Class:<br>profile parameter sets..... | 528 |
| 10.2.1 .....                                                                                 | 528 |
| 10.2.2 .....                                                                                 | 528 |
| 10.2.3 .....                                                                                 | 528 |
| 10.2.4 .....                                                                                 | 529 |
| 10.2.5 .....                                                                                 | 529 |
| 10.2.6 .....                                                                                 | 529 |
| 10.3 XHTML profiling guidelines .....                                                        | 529 |
| 10.3.1 XHTML format .....                                                                    | 529 |
| 10.3.2 XHTML format .....                                                                    | 532 |
| 10.3.3 XHTML format .....                                                                    | 532 |
| 10.3.4 XHTML format .....                                                                    | 537 |
| 11 Media Collection profile guidelines: DIDL-Lite Playlist format.....                       | 538 |
| 11.1 DIDL_S Media Collection format profile .....                                            | 538 |
| 11.2 DIDL_V Media Collection format profile .....                                            | 539 |
| 11.3 Lifetime element for the image Class.....                                               | 542 |
| 11.3.1 .....                                                                                 | 542 |
| 11.3.2 .....                                                                                 | 542 |
| 11.3.3 .....                                                                                 | 542 |
| 11.3.4 .....                                                                                 | 542 |
| Annex A (informative) ASF Recommended Procedures.....                                        | 543 |
| Annex B (normative) IFO file format: field values .....                                      | 547 |
| Figure 1 – Guideline layout and definitions .....                                            | 48  |
| Figure 2 – Visual map of possible values for the attribute tables .....                      | 49  |
| Figure 3 – Profile summary Table header.....                                                 | 53  |
| Figure 4 – ITU-R Rec. BO.1516 SYSTEM B Transport Stream Packet with TTS support .....        | 289 |
| Table 1 – Allowed Values for Change Indicator field in Attribute Table.....                  | 50  |
| Table 2 – DLNA Device Classes in the HND Device Category.....                                | 51  |
| Table 3 – DLNA Device Capabilities.....                                                      | 51  |
| Table 4 – DLNA Device Classes in the MHD Device Category .....                               | 52  |
| Table 5 – DLNA Device Classes in the HID Device Category .....                               | 53  |
| Table 6 – Categorization Labels.....                                                         | 54  |
| Table 7 – Image Class: JPEG profiles.....                                                    | 54  |
| Table 8 – Image Class: PNG profiles .....                                                    | 55  |
| Table 9 – Audio Class: AC-3 profiles.....                                                    | 55  |
| Table 10 – Audio Class: AMR profiles .....                                                   | 56  |
| Table 11 – Audio Class: ATRAC3plus profiles.....                                             | 56  |
| Table 12 – Audio Class: LPCM profiles .....                                                  | 56  |
| Table 13 – Audio Class: MP3 profiles .....                                                   | 57  |

|                                                                             |     |
|-----------------------------------------------------------------------------|-----|
| Table 14 – Audio Class: MPEG-4 profiles .....                               | 57  |
| Table 15 – Audio Class: WMA profiles .....                                  | 62  |
| Table 16 – AV Class: MPEG-1 profiles .....                                  | 62  |
| Table 17 – AV Class: MPEG-2 profiles .....                                  | 63  |
| Table 18 – AV Class: MPEG-4 Part 2 profiles .....                           | 72  |
| Table 19 – AV Class: MPEG-4 Part 10 (AVC) profiles .....                    | 80  |
| Table 20 – AV Class: WMV9 profiles .....                                    | 105 |
| Table 21 – Media collection profiles .....                                  | 106 |
| Table 22 – Printer XHTML document profiles .....                            | 106 |
| Table 23 – Image Class: GIF profiles .....                                  | 107 |
| Table 24 – Audio Class: DTS Digital Surround profiles .....                 | 107 |
| Table 25 – Audio Class: DTS-HD profiles .....                               | 107 |
| Table 26 – Audio Class: Enhanced AC-3 profiles .....                        | 108 |
| Table 27 – Audio Class: MLP profiles .....                                  | 108 |
| Table 28 – Audio Class: MPEG-1/2 profiles .....                             | 108 |
| Table 29 – AV Class: VC-1 profiles .....                                    | 108 |
| Table 30 – Required Media Format Profiles for the HND Device Category ..... | 118 |
| Table 31 – LPCM profile hierarchy .....                                     | 135 |
| Table 32 – MPEG-4 audio profile hierarchy .....                             | 143 |
| Table 33 – MPEG-4 audio profile hierarchy .....                             | 144 |
| Table 34 – List of WMA profiles for the Audio Media Class .....             | 198 |
| Table 35 – MPEG-1 AV format resolutions .....                               | 211 |
| Table 36 – Summary of MPEG-2 profiles for the AV Media Class .....          | 213 |
| Table 37 – MPEG-2 AV format resolutions .....                               | 221 |
| Table 38 – MPEG_TS_SD_NA, MPEG_TS_SD_NA_T .....                             | 234 |
| Table 39 – Additional parameters for MPEG_TS_SD_NA, MPEG_TS_SD_NA_T .....   | 236 |
| Table 40 – Video MPEG-2 AV encoding parameters .....                        | 239 |
| Table 41 – MPEG_TS_SD_KO, MPEG_TS_SD_KO_T .....                             | 242 |
| Table 42 – MPEG_TS_HD_KO, MPEG_TS_HD_KO_T .....                             | 244 |
| Table 43 – MPEG-2 AV format resolutions .....                               | 253 |
| Table 44 – MPEG-2 video encoding parameters (PS_SD) .....                   | 260 |
| Table 45 – MPEG-2 video encoding parameters (PS_HD) .....                   | 261 |
| Table 46 – MPEG-2 video encoding parameters (DIRECTV_SD) .....              | 266 |
| Table 47 – MPEG-2 video encoding parameters (SD_JP) .....                   | 266 |
| Table 48 – MPEG-2 video encoding parameters (TS_HD_DTS) .....               | 267 |
| Table 49 – MPEG_TS_SD_60_L2_T, MPEG_TS_SD_60_AC3_T .....                    | 273 |
| Table 50 – MPEG_TS_SD_50_L2_T, MPEG_TS_SD_50_AC3_T .....                    | 274 |
| Table 51 – MPEG_TS_HD_60_L2_T, MPEG_TS_HD_60_L2_ISO .....                   | 279 |
| Table 52 – MPEG_TS_HD_60_L2_T, MPEG_TS_HD_60_L2_ISO .....                   | 279 |
| Table 53 – MPEG_TS_JP_T .....                                               | 283 |
| Table 54 – MPEG_TS_HD_60_L2_T, MPEG_TS_HD_X_60_L2_ISO .....                 | 287 |
| Table 55 – MPEG_TS_HD_X_50_L2_T, MPEG_TS_HD_X_50_L2_ISO .....               | 287 |
| Table 56 – MPEG-2 video encoding parameters .....                           | 290 |

|                                                                                                         |     |
|---------------------------------------------------------------------------------------------------------|-----|
| Table 57 – MPEG-2 video picture header user data .....                                                  | 290 |
| Table 58 – MPEG-2 video user data type .....                                                            | 290 |
| Table 59 – MPEG-2 video user data info .....                                                            | 291 |
| Table 60 – MPEG-2 AV format resolution .....                                                            | 294 |
| Table 61 – DTS registration descriptor syntax .....                                                     | 297 |
| Table 62 – DTS Format Identifier Values .....                                                           | 297 |
| Table 63 – Summary of MPEG-4 Part 2 profiles for the AV Media Class .....                               | 300 |
| Table 64 – Summary of MPEG-4 Part 2 profiles for the AV Media Class .....                               | 302 |
| Table 65 – MPEG SP_L3 bit rates .....                                                                   | 304 |
| Table 66 – MPEG SP_L3 resolutions .....                                                                 | 304 |
| Table 67 – SP_L3_VGA resolutions .....                                                                  | 306 |
| Table 68 – SP_L2 resolutions .....                                                                      | 307 |
| Table 69 – SP_L0B video bit rate .....                                                                  | 307 |
| Table 70 – ASP_L5 bit rates .....                                                                       | 309 |
| Table 71 – ASP_L5 resolutions .....                                                                     | 309 |
| Table 72 – ASP_L4_SO bit rates .....                                                                    | 312 |
| Table 73 – ASP_L4_SO resolutions .....                                                                  | 312 |
| Table 74 – H263_P0_L10 resolutions .....                                                                | 314 |
| Table 75 – H263_P3_L10 resolutions .....                                                                | 315 |
| Table 76 – CO resolutions .....                                                                         | 316 |
| Table 77 – MPEG2_TS maximum system bitrate .....                                                        | 326 |
| Table 78 – MPEG2_TS, MPEG2_TS_T, and MPEG2_TS_ISO bit rates .....                                       | 326 |
| Table 79 – Maximum system bitrate .....                                                                 | 333 |
| Table 80 – Additional MPEG-4 Part 2 AV format resolutions .....                                         | 335 |
| Table 81 – Additional MPEG-4 Part 2 AV format resolutions .....                                         | 335 |
| Table 82 – Informative summary of MPEG-4 Part 2 Profiles for the AV Media Class .....                   | 343 |
| Table 83 – Resolutions for video portion profile H263_P0_L45 .....                                      | 344 |
| Table 84 – MPEG4_P2_MP4_SP_L5_AAC .....                                                                 | 347 |
| Table 85 – Resolutions for video portion profile SP_L5 .....                                            | 347 |
| Table 86 – MPEG4_P2_MP4_SP_L5_AAC bit rate .....                                                        | 348 |
| Table 87 – Summary of MPEG-4 Part 10 (AVC) profiles for the AV Media Class .....                        | 349 |
| Table 88 – Summary of additional MPEG-4 Part 10 (AVC) profiles for the AV Media Class<br>– Part 1 ..... | 353 |
| Table 89 – Summary of additional MPEG-4 Part 10 (AVC) profiles for the AV Media Class<br>– Part 2 ..... | 355 |
| Table 90 – Summary of additional MPEG-4 Part 10 (AVC) Profiles for the AV Media Class<br>– Part 3 ..... | 356 |
| Table 91 – Summary of additional MPEG-4 Part 10 (AVC) profiles for the AV Media Class<br>– Part 4 ..... | 357 |
| Table 92 – Pixel aspect ratio for AVC_TS_BL_CIF15_AAC_xxx and<br>AVC_TS_MP_SD_xxx profiles .....        | 357 |
| Table 93 – MPEG-4 Part 10 AV format frame rate .....                                                    | 359 |
| Table 94 – MPEG-4 Part 10 AV format resolutions .....                                                   | 361 |
| Table 95 – Frame rate and number of pictures in a GOP structure .....                                   | 366 |
| Table 96 – MPEG-4 Part 10 AV format resolutions .....                                                   | 367 |

|                                                                                                              |     |
|--------------------------------------------------------------------------------------------------------------|-----|
| Table 97 – MPEG-4 Part 10 AV format resolutions.....                                                         | 370 |
| Table 98 – MPEG-4 Part 10 AV format resolutions.....                                                         | 375 |
| Table 99 – MPEG-4 Part 10 AV format resolutions.....                                                         | 380 |
| Table 100 – MPEG-4 Part 10 AV format resolutions.....                                                        | 381 |
| Table 101 – MPEG-4 Part 10 AV format resolutions.....                                                        | 385 |
| Table 102 – MPEG-4 Part 10 AV format resolutions.....                                                        | 387 |
| Table 103 – MPEG-4 Part 10 AV format resolutions.....                                                        | 388 |
| Table 104 – MPEG-4 Part 10 AV format resolutions.....                                                        | 391 |
| Table 105 – MPEG-4 Part 10 AV format resolutions.....                                                        | 395 |
| Table 106 – MPEG-4 Part 10 AV format resolutions.....                                                        | 396 |
| Table 107 – MPEG-4 Part 10 AV format resolutions.....                                                        | 397 |
| Table 108 – MPEG-4 Part 10 AV format resolutions.....                                                        | 399 |
| Table 109 – MPEG-4 Part 10 AV format resolutions.....                                                        | 402 |
| Table 110 – MPEG-4 Part 10 AV format resolutions.....                                                        | 403 |
| Table 111 – MPEG-4 Part 10 AV format resolutions.....                                                        | 408 |
| Table 112 – MPEG-4 Part 10 AV format resolutions.....                                                        | 408 |
| Table 113 – MPEG-4 Part 10 AV format resolutions.....                                                        | 418 |
| Table 114 – MPEG-4 Part 10 AV format resolutions.....                                                        | 424 |
| Table 115 – MPEG-4 Part 10 AV format resolutions.....                                                        | 429 |
| Table 116 – MPEG-4 Part 10 AV format resolutions.....                                                        | 431 |
| Table 117 – MPEG-4 Part 10 AV format resolutions.....                                                        | 432 |
| Table 118 – MPEG-4 Part 10 AV format resolutions.....                                                        | 433 |
| Table 119 – MPEG-4 Part 10 AV format resolutions.....                                                        | 434 |
| Table 120 – MPEG-4 Part 10 AV format resolutions.....                                                        | 435 |
| Table 121 – MPEG-4 Part 10 AV format resolutions.....                                                        | 436 |
| Table 122 – MPEG-4 Part 10 AV format resolutions.....                                                        | 440 |
| Table 123 – MPEG-4 Part 10 AV format resolutions.....                                                        | 441 |
| Table 124 – Additional MPEG-4 Part 10 AV format resolutions .....                                            | 441 |
| Table 125 – Informative summary of MPEG-4 Part 10 (AVC) profiles for the AV Media Class .....                | 452 |
| Table 126 – Additional resolutions for AVC_MP4_BL_CIF15_HEAACv2_L2 and AVC_3GPP_BL_CIF15_AMR_WBplus_res..... | 460 |
| Table 127 – Additional resolutions for AVC_MP4_BL_CIF30_HEAACv2_L2 and AVC_3GPP_BL_CIF30_AMR_WBplus_res..... | 461 |
| Table 128 – Format resolutions.....                                                                          | 467 |
| Table 129 – Format resolutions.....                                                                          | 468 |
| Table 130 – Format resolutions.....                                                                          | 468 |
| Table 131 – Resolutions .....                                                                                | 469 |
| Table 132 – Additional resolutions .....                                                                     | 470 |
| Table 133 – MPEG-4 Part 10 AV format resolution.....                                                         | 477 |
| Table 134 – ATSC/SCTE AVC SEI syntax for Closed Caption data .....                                           | 477 |
| Table 135 – AVC Caption Transport Syntax following provider_code = 0x002F .....                              | 478 |
| Table 136 – MPEG-4 Part 10 AV format resolution.....                                                         | 483 |
| Table 137 – DTS registration descriptor syntax.....                                                          | 485 |

|                                                                         |     |
|-------------------------------------------------------------------------|-----|
| Table 138 – DTS and DTS-HD format identifier values.....                | 485 |
| Table 139 – DTS registration descriptor syntax.....                     | 486 |
| Table 140 – DTS and DTS-HD format identifier values.....                | 487 |
| Table 141 – MPEG-4 Part 10 AV format resolution.....                    | 492 |
| Table 142 – MPEG-4 Part 10 AV format resolution.....                    | 495 |
| Table 143 – MPEG-4 Part 10 AV format resolutions.....                   | 500 |
| Table 144 – MPEG-4 Part 10 AV format resolutions.....                   | 503 |
| Table 145 – MPEG-4 Part 10 AV format resolution.....                    | 506 |
| Table 146 – MPEG-4 Part 10 AV format resolution.....                    | 507 |
| Table 147 – List of WMV9 profiles for the AV Media Class.....           | 509 |
| Table 148 – VC-1 AV format resolutions .....                            | 517 |
| Table 149 – VC-1 AV format resolutions .....                            | 522 |
| Table B.1 – Fields within an IFO file Supplied by Serving Endpoint..... | 547 |
| Table B.2 – IFO file fields treatment by Rendering Endpoints.....       | 550 |

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**DIGITAL LIVING NETWORK ALLIANCE (DLNA) HOME  
NETWORKED DEVICE INTEROPERABILITY GUIDELINES –****Part 2: DLNA media formats**

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International Standard IEC 62481-2 has been prepared technical area 9: Audio, video and multimedia applications for end-user network, by IEC technical committee 100: Audio, video and multimedia systems and equipment.

This second edition cancels and replaces the first edition published in 2007, and constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) addition of new optional media format profiles for Audio and AV content;
- b) addition of mandatory media format profiles for the CVP-1 Device Profile;
- c) includes updates to resolve interoperability issues.



The text of this standard is based on the following documents:

| CDV          | Report on voting |
|--------------|------------------|
| 100/1993/CDV | 100/2081/RVC     |

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of IEC 62481 series, published under the general title *Digital living network alliance (DLNA) home networked device interoperability guidelines*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

**IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.**

## INTRODUCTION

It is envisioned that in the home network environment, devices will be capable of exchanging content items that originate from different sources. Content items will typically come encoded in different formats. The term "format" designates the compression and encoding tools utilized to generate the binary instance of a content item, which will be eventually exchanged over the home network using streaming or file transfer protocols. Examples of formats include MPEG-2, MPEG-4, WMV and others for video; or MP3, AAC, WMA and others for audio.

Formats alone, however, include as part of their specifications, multiple parameters, features and tools which can be used in a myriad of combinations to generate content binaries. In this standard, the notion of a Media Format Profile is introduced to identify a particular suitable combination of format parameters which define a way for representing content binaries. A format like MPEG-2 for example, can have multiple Media Format Profiles depending on selections for the companion audio, the system-layer multiplexing specifications, allowed frame resolutions, allowed aspect ratios, allowed bit rates, etc.

The number of potential combinations for suitable Media Format Profiles increases rather quickly, as evidenced by the long profile lists observed in the different clauses and subclauses of this standard. Consequently, this standard introduces the notion of mandatory profiles, supported by all devices, as a means to provide baseline content interoperability in the home. Servers shall be capable of exposing and transferring mandatory profiles while players and renderers shall be capable of decoding and rendering the mandatory profiles. Unfortunately, mandatory Media Format Profiles cannot be defined universally to suit all scenarios. For this reason, the definition of mandatory profiles has to be made taking into account the geographical region and the target device category. Clause 6 provides the definitions and requirements for using mandatory profiles.

All profiles not defined as mandatory become optional in the home. An implementer can choose whether to support optional profiles. When supported and used with DLNA's discovery and transfer methods, it shall follow the guideline provisions for encoding and exposing optional profiles.

# DIGITAL LIVING NETWORK ALLIANCE (DLNA) HOME NETWORKED DEVICE INTEROPERABILITY GUIDELINES –

## Part 2: DLNA media formats

### 1 Scope

This part of IEC 62481 describes DLNA Media Format Profiles applicable to the DLNA Device Classes defined in IEC 62481-1. Media Format Profiles are defined for each of the following media classes: Audio, Image, and AV. In addition, Profile ID values that identify media collections and printer XHTML documents are also introduced.

The Profile ID is exposed in a server's Content Directory Service (CDS) to signal potential networked players or renderers the existence of a content item with particular coding and compression features defined precisely by the item's Profile ID.

### 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.

IEC 62481-1:2013, *Digital living network alliance (DLNA) home networked device interoperability guidelines – Part 1: Architecture and protocols*

ISO/IEC 10918-1:1994, *Information technology – Digital compression and coding of continuous-tone still images: Requirements and guidelines*

ISO/IEC 11172-1:1993, *Information technology – Coding of moving pictures and associated audio for digital storage media at up to about 1,5 Mbit/s – Part 1: Systems*

ISO/IEC 11172-2:1993, *Information technology – Coding of moving pictures and associated audio for digital storage media at up to about 1,5 Mbit/s – Part 2: Video*

ISO/IEC 11172-3:1993, *Information technology – Coding of moving pictures and associated audio for digital storage media at up to about 1,5 Mbit/s – Part 3: Audio*

ISO/IEC 13818-1:2000, *Information technology – Generic coding of moving pictures and associated audio information – Part 1: Systems*

ISO/IEC 13818-2:2000, *Information technology – Generic coding of moving pictures and associated audio information – Part 2: Video*

ISO/IEC 13818-3:1998, *Information technology – Generic coding of moving pictures and associated audio information – Part 3: Audio*

ISO/IEC 13818-7:2003, *Information technology – Generic coding of moving pictures and associated audio information – Part 7: Advanced Audio Coding (AAC)*

ISO/IEC 13818-7:2003/Amd 1:2004, *Information technology – Generic coding of moving pictures and associated audio information – Part 7: Advanced Audio Coding (AAC)*  
*Amendment 1: Embedding of bandwidth extension*

ISO/IEC 13818-7:2005, *Information technology – Generic coding of moving pictures and associated audio information – Part 7: Advanced Audio Coding (AAC)*

ISO/IEC 13818-7:2006/Amd 1: 2007, *Information technology – Coding of Audio-Visual Objects – Part 7: Advanced Audio Coding (AAC)*  
*Amendment 1*

ISO/IEC 13818-11:2004, *Information technology – Generic coding of moving pictures and associated audio information – Part 11: IPMP on MPEG-2 Systems:*

ISO/IEC 14496-1:2001, *Information Technology – Coding of Audio-Visual Objects – Part 1: Systems*

ISO/IEC 14496-2:2001, *Information technology – Coding of audio-visual objects – Part 2: Visual*<sup>1</sup>

ISO/IEC 14496-2:2001/Amd 2:2002, *Information Technology – Coding of audio-visual objects – Part 2: Visual, Amendment 2: Streaming video profile*

ISO/IEC 14496-2:2004, *Information Technology – Coding of audio-visual objects – Part 2: Visual*

ISO/IEC 14496-2:2004/Amd 1, *Information Technology – Coding of Audio-Visual Objects – Part 2: Visual, AMENDMENT 1: Error resilient simple scalable profile*

ISO/IEC 14496-2:2004/Amd 2:2005, *Information Technology – Coding of audio-visual objects – Part 2: Visual, Amendment 2: "New Levels for Simple Profile"*

ISO/IEC 14496-2:2004/Amd 3 – *Coding of audio-visual objects – Part 2: Visual, Amendment 3: New levels and tools for MPEG-4 visual*

ISO/IEC 14496-2:2004/PDAM 4, *Information Technology – Coding of Audio-Visual Objects – Part 2: Visual, Amendment 4, Simple profile Level 6*

ISO/IEC 14496-3:2001, *Information technology – Coding of Audio-Visual Objects – Part 3: Audio*

ISO/IEC 14496-3:2001/Amd.1:2003, *Information technology – Coding of Audio-Visual Objects – Part 3: Audio, Amendment 1: Bandwidth extension*

ISO/IEC 14496-3:2005, *Information technology – Coding of audio-visual objects: Audio*

ISO/IEC 14496-3:2005/Amd 2:2006, *Information technology – Coding of Audio-Visual Objects – Part 3: Audio, Amendment 2: Audio Lossless Coding (ALS), new audio profiles and BSAC extensions*

ISO/IEC 14496-3:2005/Amd 2:2006/Cor 2, *Information technology – Coding of Audio-Visual Objects – Part 3: Audio, Amendment 2, Technical Corrigendum 2*

ISO/IEC 14496-4, *Information technology – Coding of audio-visual objects – Part 4: Conformance testing*<sup>2</sup>

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<sup>1</sup> In this standard referenced as MPEG 4, part 2.

ISO/IEC 14496-10:2003, *MPEG-4 Video, Information technology – Coding of audio-visual objects – Part 10: Advanced Video Coding*<sup>3</sup>

ISO/IEC 14496-12:2004, *Information technology – Coding of Audio-Visual Objects – Part 12: ISO base media file format*

ISO/IEC 14496-14:2003, *Information technology – Coding of Audio-Visual Objects – Part 14: MP4 file format*<sup>4</sup>

ISO/IEC 14496-15:2004, *Information technology – Coding of Audio-Visual Objects – Part 15: AVC file format*

ISO/IEC 15948:2004, *Information technology – Computer graphics and image processing – Portable Network Graphics (PNG): Functional specification*, International Standard Organization

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