

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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 62481-2:2014 sisaldab Euroopa standardi EN 62481-2:2014 inglisekeelset teksti.	This Estonian standard EVS-EN 62481-2:2014 consists of the English text of the European standard EN 62481-2:2014.
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**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)

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Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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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- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-10-30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 + corr. December	2000 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 + A2	2001 2002	Information technology - Coding of audio-visual objects - Part 2: Visual	- -	- -
ISO 14496-2 + A2	2004 2005	Information technology - Coding of audio-visual objects - Part 2: Visual	- -	- -
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 + A1	2001 2003	Information technology - Coding of audio-visual objects - Part 3: Audio	- -	- -
ISO/IEC 14496-3	2005	Information technology - Coding of audio-visual objects - Part 3: Audio	-	-
+ A2	2006		-	-
+ A2	2006		-	-
ISO/IEC 14496-4 + corr. August	2004 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	-	-
ATSC Standard A/53C	-	Digital Television Standard, Revision C with Amendment 1	-	-
ETSI ES 201 812	-	Multimedia Home Platform (MHP) specification 1.0.3 (DVB-MHP), V1.1.1, Digital Video Broadcasting (DVB), European Telecommunications Standard Institute	-	-
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	-	-
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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>
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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which can be obtained through the Windows Media 9 Series License Program
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3GPP TS 26.234, *Transparent End-to-End Packet-Switched Streaming Service (PSS); Protocols and Codecs*, Release 6 Version 6.4.0, 2005-06-24

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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)*