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Digital living network alliance (DLNA) home networked device interoperability guidelines – Part 5: Device Profiles

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

Part 5: Device Profiles

FOREWORD

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International Standard IEC 62481-5 has been prepared under technical area 8: Multimedia home systems and applications for end-user network, IEC technical committee 100: Audio, video and multimedia systems and equipment.

This second edition cancels and replaces the first edition published in 2013. This edition constitutes a technical revision.

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

a) removal of CVP-NA-1;
b) addition of CVP-2.

The text of this International Standard is based on the following documents:

CDV	Report on voting
100/2734/CDV	100/2884/RVC

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

This document 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 document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

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- withdrawn,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

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

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INTRODUCTION

Consumers are acquiring, viewing, and managing an increasing amount of digital media (photos, music, and video) on devices in the consumer electronics (CE), mobile, and Personal Computer (PC) domains. As such, they want to conveniently enjoy the content, regardless of the source, across different devices and locations in the home. The digital home vision integrates the Internet, mobile, and broadcast networks through a seamless, interoperable network, which will provide a unique opportunity for manufacturers and consumers alike. In order to cater for this need, a common set of industry design guidelines is needed that allows vendors to participate in a growing marketplace, leading to more innovation, simplicity, and value for consumers. This document serves that purpose and provides vendors with the information needed to build interoperable networked platforms and devices for the digital home.

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

Part 5: Device Profiles

1 Scope

This part of IEC 62481 (the DLNA guidelines) specifies guidelines that define various DLNA Device Profiles. A Device Profile is a collection of DLNA capabilities and features within a DLNA device. A device is compliant with a Device Profile when it conforms to all the guidelines listed for that Device Profile.

In practice, Device Profiles reference existing optional or recommended DLNA guidelines that enable certain features, and make those DLNA guidelines mandatory within the context of a Device Profile. A Device Profile can also provide some additional guidelines that complement or modify existing DLNA guidelines for a feature.

A particular type of the DLNA Device Profile is the Commercial Video Profile (CVP). A CVP Device Profile is an extension of the DLNA guidelines that allows content from service providers and multichannel video programming distributers to be distributed on the DLNA network. DLNA Commercial Video Profiles (CVPs) are defined as Device Profiles that consistently enable commercial content that enters the home network through a gateway device via an interface to a commercial content service provider. Since different regions of the world have different requirements for commercial content, multiple CVPs are defined.

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2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62481-1-1:2017, *Digital living network alliance (DLNA) home networked device interoperability guidelines – Part 1-1: Architecture and protocols*

IEC 62481-1-2:2017, *Digital living network alliance (DLNA) home networked device interoperability guidelines – Part 1-2: Architecture and protocols – Extended Digital Media Renderer*

IEC 62481-2:2017, *Digital living network alliance (DLNA) home networked device interoperability guidelines – Part 2: DNLA media formats*

IEC 62481-3:2017, *Digital living network alliance (DLNA) home networked device interoperability guidelines – Part 3: Link protection*

IEC 62481-6-1:2017, *Digital living network alliance (DLNA) home networked device interoperability guidelines – Part 6-1: Remote user interface – HTML5*

IEC 62481-7:2017, *Digital living network alliance (DLNA) home networked device interoperability guidelines – Part 7: Authentication*

IEC 62481-8:2017, *Digital living network alliance (DLNA) home networked device interoperability guidelines – Part 8: Diagnostics*

IEC 62481-9:2017, *Digital living network alliance (DLNA) home networked device interoperability guidelines – Part 9: HTTP adaptive delivery*

IEC 62481-10:2017, *Digital living network alliance (DLNA) home networked device interoperability guidelines – Part 10: Low power mode*

DTLA CVP-2, *DTLA CVP-2 Volume 1 Specification, Digital Transmission Licensing Administrator (DTLA)*
http://www.dtcp.com/specifications.aspx

W3C HTML5 Specification, *A vocabulary and associated APIs for HTML and XHTML*
http://dev.w3.org/html5/spec

W3C SELECTORS, *Cascading Style Sheets Selectors Level 3, W3C*
http://www.w3.org/TR/selectors/

W3C NAMESPACES, *Cascading Style Sheets Namespaces Module, W3C*
www.w3.org/TR/css3-namespace/

W3C SELECTORS-API, *Cascading Style Sheets Selectors API Level 1, W3C*
http://www.w3.org/TR/selectors-api/

3 Terms, definitions, abbreviated terms and conventions

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For the purposes of this document, the terms and definitions given in IEC 62481-1-1:2017 and the following apply.

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ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1 Terms and definitions

3.1.1
CVP-2 Certificate
certificate that is either a DTCP CVP-2 Certificate or an X.509 CVP-2 Certificate

3.1.2
Device Profile
collection of DLNA capabilities and features within a DLNA device

Note 1 to entry: A device is compliant with a Device Profile when it implements all the guidelines listed for that Device Profile.

3.1.3
(DMP DMR)
DMP Device Class and DMR Device Class that is co-located

3.1.4
DTCP CVP-2 Certificate
DTCP certificate issued by DTLA to DLNA CVP-2 certified devices (client or server)

Note 1 to entry: DTLA requirements regarding these certificates are provided in DTLA CVP-2.

3.1.5
X.509 CVP-2 Certificate
DLNA-approved X.509 certificate issued to a server for authentication by CVP-2 Clients

Note 1 to entry: X.509 CVP-2 Certificates are certificate issued by a Certificate Authority approved by the DLNA Board of Directors (e.g. DTLA) to a DLNA CVP-2 certified server device in the home or to a server in the cloud that complies with the best Internet and DLNA practices (e.g. Authentication Server, RUI-H Transport Server). DLNA maintains a list of approved sources of X.509 CVP-2 Certificates.

3.1.6
CVP
Commercial Video Profiles
DLNA Device Profile that allows commercial content acquired through a commercial video provider's gateway device to be played on the DLNA network

3.2 Abbreviated terms

EAS Emergency Alert System

3.3 Conventions

In IEC 62481-1-1:2017 and this document, a number of terms, conditions, mechanisms, sequences, parameters, events, states, or similar terms are printed with the first letter of each word in uppercase and the rest in lowercase (e.g. Device Profile). Any lowercase uses of these words have the normal technical English meanings.

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4 Networking architecture, device models and guideline conventions

4.1 DLNA home networking architecture

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See Clause 4 of IEC 62481-1-1:2017 for a full description of the DLNA home networking architecture.

4.2 DLNA device model

See Clause 5 of IEC 62481-1-1:2017 for a full description of the DLNA device model.

4.3 Document conventions

See Clause 6 of IEC 62481-1-1:2017 for a full description of the DLNA document conventions.

5 DLNA Device Profile guidelines

5.1 Overview

This clause describes the format of the guidelines for DLNA Device Profiles. Applicability of a referenced guideline to a specific Device Class is defined both by the attribute table of the guideline that references it, as well as by the "applicable Device Classes" column of the Device Profile definition in the table at the top of each Device Profile clause.

CVP-2 architecture, system usages and deployment scenarios is described in Annex A, and the CVP-2 client implementer's guide is in Annex C.

5.2 Defined Device Profiles

Each Device Profile begins with a table that briefly describes it.

This table also indicates which DLNA Device Classes the Device Profile applies to. Although a guideline, as defined, could apply to additional Device Classes, the defined Device Profile only

provides for the guideline's applicability to the Device Classes listed in conjunction with the Device Profile.

The definition of a Device Profile in Table 1 (the applicable Device Classes and the Device Profile name) is a normative definition of that Device Profile. The Device Classes that a guideline applies to within the context of a Device Profile are the intersection of the Device Classes the guideline applies to (from its attribute table) and the Device Classes that the Device Profile applies to (from its introductory table). See 7.1 in IEC 62481-1-1:2017 for guideline and attribute table layout descriptions.

6 CVP-2 guidelines

6.1 Device profile definition

Table 1 – CVP-2 device profile definition

Device Profile	Applicable Device Classes and Capabilities
Name: CVP-2_Client **Description:** This is a CVP-2 Client Device Profile that defines a full set of functionality required for a rendering endpoint device to access commercial content available to DLNA devices in North America and Europe. This does not limit the Device Profile's applicability to other regions and other devices.	• (DMP DMR) or XDMR +RUIHPL+ +DIAGE+ +LPC+
Name: CVP-2_Server **Description:** This is a CVP-2 Server Device Profile that defines a full set of functionality required for a serving endpoint device to make commercial content available to DLNA devices in North America and Europe. This does not limit the Device Profile's applicability to other regions and other devices.	• DMS +RUIHSRC+ +DIAGE+ +LPE+

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6.2 Media Format Profiles guidelines

6.2.1 Media Format Profiles

6.2.1.1

[GUIDELINE] A CVP-2 Client shall conform to all the guidelines for the Media Format Profiles specified in Table 2 for the regions supported by the device. A CVP-2 Client shall also conform to the guidelines for the required Media Format Profiles for the rendering endpoints of HND Device Category for the regions supported by the device as defined in IEC 62481-2:2017.

Table 2 – Mandatory Media Format Profiles for North America and Europe

	North America	Europe
Mandatory Media Format Profiles	MPEG_TS_NA_ISO AVC_TS_NA_ISO AVC_TS_NA_T MPEG_TS_HD_NA_T	AVC_MP4_BL_CIF15_AAC_520 AVC_TS_EU_ISO AVC_MP4_EU

[ATTRIBUTES]

M	A	(DMP DMR) XDMR +RUIHPL+	n/a	n/a	IEC 62481-2:2017	S3ETP	

[COMMENT] This guideline mandates the region-specific Media Format Profiles for a CVP-2 Client. A CVP-2 Client indicates support for regions through registration during certification. The Mandatory Media Format Profiles for registered regions, as defined in IEC 62481-2:2017, for