
Smernice za medobratovalnost naprav, povezanih v domače omrežje po Standardu za hišna digitalna omrežja (DLNA) - 3. del: Zaščita povezav (IEC 62481-3:2010)

Digital living network alliance (DLNA) home networked device interoperability guidelines - Part 3: Link protection (IEC 62481-3:2010)

Digital living network alliance (DLNA) Interoperabilitäts-Richtlinien für Geräte im Heimnetzwerk - Teil 3: Verbindungsschutz (IEC 62481-3:2010)

Instructions pour l'interopérabilité des appareils raccordés à un réseau domestique DLNA (Digital living network alliance) - Partie 3: Protection des liaisons (CEI 62481-3:2010)

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SIST EN 62481-3:2011**en**

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**Digital living network alliance (DLNA) home networked device
interoperability guidelines -
Part 3: Link protection
(IEC 62481-3:2010)**

Instructions pour l'interopérabilité des
appareils raccordés à un réseau
domestique DLNA (Digital living network
alliance) -
Partie 3: Protection des liaisons
(CEI 62481-3:2010)

Digital living network alliance (DLNA)
Interoperabilitäts-Richtlinien für Geräte im
Heimnetzwerk -
Teil 3: Verbindungsschutz
(IEC 62481-3:2010)

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This European Standard was approved by CENELEC on 2010-12-01. 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 Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 100/1617/CDV, future edition 1 of IEC 62481-3, prepared by IEC TC 100, Audio, video and multimedia systems and equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62481-3 on 2010-12-01.

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The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2011-09-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2013-12-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62481-3:2010 was approved by CENELEC as a European Standard without any modification.

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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.

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	2007	Digital living network alliance (DLNA) home networked device interoperability guidelines - Part 1: Architecture and protocols	-	-
IEC 62481-2	2007	Digital living network alliance (DLNA) home networked device interoperability guidelines - Part 2: DLNA media formats	-	-
ISO/IEC 13818-1	2007	Information technology - Generic coding of moving pictures and associated audio information: Systems	-	-
ISO/IEC 13818-2	2000	Information technology - Generic coding of moving pictures and associated audio information: Video	-	-
ISO/IEC 14496-2	2004	Information technology - Coding of audio-visual objects - Part 2: Visual	-	-
+ A1	2004		-	-
ISO/IEC 29341-3-10	2008	Information technology - UPnP Device Architecture - Part 3-10: Audio Video Device Control Protocol - Audio Video Transport Service	-	-
ISO/IEC 29341-3-11	2008	Information technology - UPnP Device Architecture - Part 3-11: Audio Video Device Control Protocol - Connection Manager Service	-	-
ISO/IEC 29341-3-12	2008	Information technology - UPnP Device Architecture - Part 3-12: Audio Video Device Control Protocol - Content Directory Service	-	-
DTCP Volume 1, Revision 1.4	2005	Digital transmission content protection specification	-	-
DTCP Volume 1 Supplement E, Revision 1.1	2005	Mapping DCTP to IP	-	-
DTCP Audio Compliance Rules EXHIBIT B-2	2002	Compliance rules for licensed products that receive or transmit commercial audio works	-	-

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEEE 802.1Q	-	IEEE Standard for Local and Metropolitan Area Networks - Virtual Bridged Local Area Networks	-	-
IEEE 802.11	-	IEEE Standard for Information technology- Telecommunications and information exchange between systems-Local and metropolitan area networks-Specific requirements - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications	-	-

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INTERNATIONAL STANDARD



**Digital living network alliance (DLNA) home networked device interoperability
guidelines –
Part 3: Link protection**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**DIGITAL LIVING NETWORK ALLIANCE (DLNA) HOME
NETWORKED DEVICE INTEROPERABILITY GUIDELINES –**
Part 3: Link protection

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 62481-3 has been prepared by technical area 9: Audio, video and multimedia applications for end-user network, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

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

CDV	Report on voting
100/1617/CDV	100/1739/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 the 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.

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

Part 3: Link protection

1 Scope

This part of IEC 62481 specifies the DLNA link protection guidelines, which are an extension of the DLNA guidelines. DLNA link protection is defined as the protection of a content stream between two devices on a DLNA network from illegitimate observation or interception using the protocols defined within this standard.

Content protection is an important mechanism for ensuring that commercial content is protected from piracy and illegitimate redistribution. Link protection is a technique that enables distribution of protected commercial content on a home network, thus resulting in greater consumer flexibility while still preserving the rights of copyright holders and content providers.

The guidelines in this standard reference existing technologies for link protection and provide mechanisms for interoperability between different implementations as well as integration with the DLNA architecture.

This standard is organized to align with the overall structure of IEC 62481-1 and IEC 62481-2.

2 Normative reference

[SIST EN 62481-3:2011](https://standards.iteh.ai/catalog/standards/sist/c476218b8a148/sist-en-62481-3-2011)

<https://standards.iteh.ai/catalog/standards/sist/c476218b8a148/sist-en-62481-3-2011>

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IEC 62481-1:2007, *Digital living network alliance (DLNA) home networked device interoperability guidelines – Part 1: Architecture and protocols*

IEC 62481-2:2007, *Digital living network alliance (DLNA) home networked device interoperability guidelines – Part 2: DLNA media formats*

ISO/IEC 13818-1:2007, *Information technology – Generic coding of moving pictures and associated audio information: Systems*

ISO/IEC 13818-2:2007, *Information technology – Generic coding of moving pictures and associated audio information: Video*

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

Amendment 1 (2004), *Error resilient simple scalable profile*

ISO/IEC 29341-3-10:2008, *Information technology – UPnP device architecture – Part 3-10: Audio video device control protocol – Audio video transport service*

ISO/IEC 29341-3-11:2008, *Information technology – UPnP device architecture – Part 3-11: Audio video device control protocol – Connection manager service*

ISO/IEC 29341-3-12:2008, *Information technology – UPnP device architecture – Part 3-12: Audio video device control protocol – Content directory service*

DTCP Volume 1 (informational version), *Digital transmission content protection specification*
Volume 1, Revision 1.4: February 28, 2005
http://www.dtcp.com/data/info/20050228_dtcp_vol_1_1p4.pdf

DTCP Volume 1 Supplement E (informational version)
Mapping DTCP to IP, Revision 1.1: February 28, 2005
http://www.dtcp.com/data/info/20050228_dtcp_VISE_1p1.pdf

DTCP Audio Compliance Rules EXHIBIT B-2:
Compliance rules for licensed products that receive or transmit commercial audio works,
June 2002
http://www.dtcp.com/data/Compliance_Rules_Audio_020610.pdf

IEEE 802.1Q, *IEEE standard for information technology – Telecommunications and information exchange between systems – IEEE standard for local and metropolitan area networks – Common specifications – Virtual Bridged Local Area Networks*

IEEE 802.11, *IEEE standard for information technology – Telecommunications and information exchange between systems – Local and metropolitan area networks-specific requirements – Part 11: Wireless LAN Medium, Access Control (MAC) and Physical Layer (PHY) specifications*

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3 Terms, definitions and acronyms

For the purposes of this document, the following terms, definitions and acronyms apply.

[SIST EN 62481-3:2011](https://standards.iteh.ai/catalog/standards/sist/cc85b06-6923-4d19-af9f-476218b8a148/sist-en-62481-3-2011)

3.1 Terms and definition

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3.1.1

authentication and key exchange

AKE

step in a link protection system where the receiving device is authenticated and given the correct keys for the content

3.1.2

advanced system format

ASF

media format encapsulation for the transmission of content

3.1.3

audio with video

AV

any media content that contains both moving picture and sound

3.1.4

AV transport

AVT

UPnP service that provides network-based control for common transport operations such as play, stop, pause, next, previous, and seek, a standard UPnP DCP

3.1.5

cleartext

unencrypted content stream after decryption by the upstream content protection system and before encryption by the link protection system

3.1.6**cleartext byte domain**

specification of a byte position in the cleartext content stream for a complete explanation of seek operations on link protected content, see Annex A

3.1.7**cleartext byte seek request header**

used to signify any of those transport layer request headers; implies that the guideline applies to all uses of any of the request headers

3.1.8**cleartext byte seek response header**

used to signify any of those transport layer response headers; implies that the guideline applies to all uses of any of the request headers

3.1.9**connection manager service****CMS**

UPnP service that provides information about the supported transport protocols and media formats of a UPnP device, a standard UPnP DCP

3.1.10**contributing source****CSRC**

source used for the RTP media transport

3.1.11**decoder friendly alignment position**

position in the bitstream defined for decoder friendly alignment; always the start of a media format alignment element that can begin to process data without any other internal state information about the stream so that the decoder can begin processing at that point and create a valid output rendering

3.1.12**digital living network alliance****DLNA**

organization that originally developed this standard

3.1.13**DLNA link protection**

protection, using DLNA protocol elements as defined in these guidelines, of a content stream between two devices on a DLNA network from illegitimate observation or interception

3.1.14**DLNA QoS user priority****DLNAQOS_UP**

DLNA-defined QoS label used to correlate an underlying IEEE 802.1Q user priority and WMM access category to a DLNA traffic type(s)

3.1.15**digital transmission content protection****DTCP**

one of the link protection system

3.1.16**digital transmission content protection over IP networks****DTCP-IP**

DTCP as applied IP based network