



SLOVENSKI STANDARD

SIST EN 62295:2009

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Multimedia systems - Common communication protocol for inter-connectivity on heterogeneous networks (IEC 62295:2007)

Multimediasysteme - Gemeinsames Kommunikationsprotokoll für die Zusammenschaltung von heterogenen Netzwerken (IEC 62295:2007)

Systemes multimédia - Protocole de communication commun relatif à la connectivité entre réseaux hétérogènes (CEI 62295:2007)

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35.110 Omreževanje Networking

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

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**Multimedia systems -
Common communication protocol
for inter-connectivity on heterogeneous networks
(IEC 62295:2007)**

Systèmes multimédia -
Protocole de communication commun
relatif à la connectivité
entre réseaux hétérogènes
(CEI 62295:2007)

Multimediasysteme -
Gemeinsames Kommunikationsprotokoll
für die Zusammenschaltung
von heterogenen Netzwerken
(IEC 62295:2007)

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This European Standard was approved by CENELEC on 2009-07-01. 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

Central Secretariat: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 100/1200/CDV, future edition 1 of IEC 62295, prepared by technical area 8, Multimedia home server systems, of 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 62295 on 2009-07-01.

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) 2010-04-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2012-07-01

Endorsement notice

The text of the International Standard IEC 62295:2007 was approved by CENELEC as a European Standard without any modification.

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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

MULTIMEDIA SYSTEMS –
COMMON COMMUNICATION PROTOCOL
FOR INTER-CONNECTIVITY ON HETEROGENEOUS NETWORKS

FOREWORD

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International Standard IEC 62295 has been prepared by technical area 8: Multimedia home server systems, 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
100/1200/CDV	100/1283/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.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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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INTRODUCTION

Numerous wired and wireless home network technologies of various types have been developed and are in use today. However, since these technologies have been developed for specific functions such as control, A/V and data services, interoperability is not guaranteed among products employing these technologies. Hence, users who wish to implement the home network environment either purchase devices that are based on a single technology for interoperability or install independent, non-compatible networks in their home.

To solve these problems, home network businesses and service providers have taken into account and developed a number of specific technologies in order to allow interoperability among home network technologies. However, most of these technologies are local and offer interoperability between a limited range of devices and give rise to new problems caused by complexity and diversity in technologies of different companies.

In order to incorporate such complex and diverse technologies, there is a need to develop a new convergence technology that can integrate not only current technologies but also those expected to surface in the future.

The needs for the new convergence technology are the following:

- provide interoperability and interconnectivity among heterogeneous networks through a specific convergence layer;
- provide expandability for applications in not only current network technologies, but also new technologies to be developed in the future;
- are applicable in small devices with low processing capabilities by providing protocols such as simple signaling in the convergence layer;
- available at a low cost and simple to implement on a device;
- able to provide diverse home network services (or applications).

MULTIMEDIA SYSTEMS – COMMON COMMUNICATION PROTOCOL FOR INTER-CONNECTIVITY ON HETEROGENEOUS NETWORKS

1 Scope and object

This International Standard specifies the common communication protocol (CCP) layer that is capable of providing interoperability and interconnectivity between heterogeneous network technologies, as well as the basic data transmission scheme between devices linked to heterogeneous networks through the CCP layer. The standard also specifies the packet structure in the CCP layer and the common addressing scheme that can be understood among heterogeneous devices. Furthermore, there are specifications regarding protocols capable of providing diverse home network applications through the CCP layer such as the home network management protocol (HNMP), universal home control protocol (UHCP), home multimedia service protocol (HMSP) and home data service protocol (HDSP).

NOTE HNMP is the overall home network management protocol that detects or registers devices. UHCP controls and monitors devices from remote locations. HMSP is the A/V protocol for home entertainment services. HDSP deals with data and messaging services.

This standard is to be applied to systems with network capabilities and those that constitute home networks such as electronic appliances, A/V components, control devices, network terminals and home servers. Moreover, this standard is applicable to a home network consisting of a single home server.

This International Standard gives

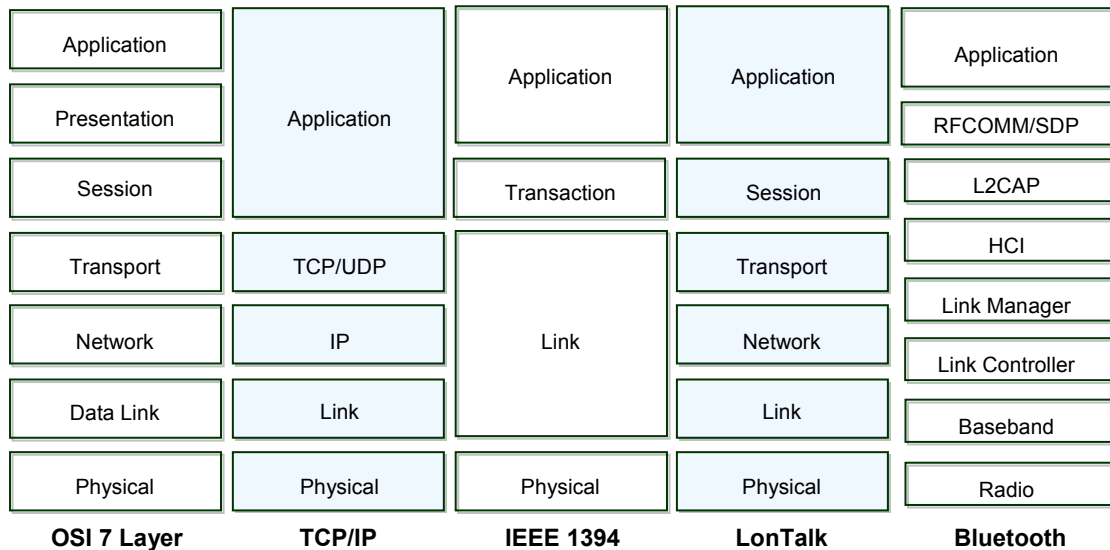
[SIST EN 62295:2009](https://standards.iteh.ai/catalog/standards/sist/dd650fad-8100-45d6-a169-67edcd02ee0b/sist-en-62295-2009)

- a definition of the CCP layer,
- a data transmission scheme in the CCP layer,
- a CCP packet structure,
- a CCP addressing scheme,
- a home network management protocol (HNMP),
- a universal home control protocol (UHCP),
- a home data service protocol (HDSP),
- requirements of home multimedia service protocol (HMSP).

A home network provides interoperability and interconnectivity regardless of the appliance manufacturer or the network type so that the user is able to receive desired services at any point in time. However, current home network technologies have independent communication protocol layer structures, as shown in Figure 1, with different addressing schemes, data transmission schemes, data processing methods and data formats.

In order to solve problems associated with interoperability and interconnectivity among heterogeneous network technologies, this standard aims to define the CCP layer as a type of a convergence layer.

Further objectives of this standard include specifying the data transmission method, packet structure and common addressing scheme as well as the signaling protocol for providing home network management, control, A/V and data services.



IEC 2072/07

Figure 1 – Communication layer structures of network technologies

2 Normative references

None.

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3 Terms, definitions, abbreviations and conventions

For the purposes of this document, the following definitions apply.

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3.1 Terms and definitions

3.1.1

CCP device

device which has networking capabilities using commercial network technologies to link to a home network; it also supports at least home network management protocol (HMNP) among four protocols provided in the CCP layer and CCP

3.1.2

CCP addressing

common addressing scheme used in the CCP layer which consists of four fields: domain address, cluster address and device ID

NOTE One of the characteristics of CCP addressing is that it has a structure that is understood by application programs embedded in devices linked to heterogeneous networks as well as the device users.

3.1.3

home server interface

HSI

interface module in a home server responsible for connection with a particular network which can process the corresponding physical interface and the communication protocol according to the type of network it is connected to

NOTE A home server interface is shown in Figure 2.

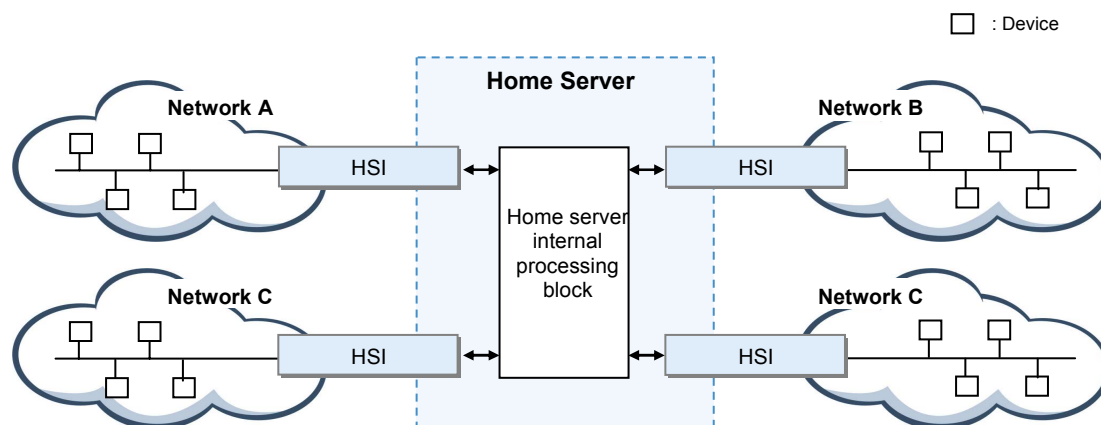


Figure 2 – Server interface

IEC 2073/07

3.1.4 cluster network

collection of devices using an identical physical interface and communication protocol

NOTE 1 As shown in Figure 3, a cluster network is a collection of devices using an identical physical interface and communication protocol. Moreover, a HSI that links a home server to the devices within the cluster network is also part of the cluster network. A cluster address is one of the CCP addressing fields defined in the CCP layer, and it is used to distinguish multiple cluster networks linked to a single home server.

NOTE 2 A HSI that links a home server to the devices within the cluster network is also part of the cluster network.

NOTE 3 A cluster network is shown in Figure 3.

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3.1.5 cluster address

one of the CCP addressing fields defined in the CCP layer which is used to distinguish multiple cluster networks linked to a single home server

NOTE A cluster address is shown in Figure 3.