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Multimedia home network – Network interfaces for network adapter

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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MULTIMEDIA HOME NETWORK – NETWORK INTERFACES FOR NETWORK ADAPTER

FOREWORD

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International Standard IEC 62480 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:

FDIS	Report on voting
100/1354/FDIS	100/1389/RVD

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- withdrawn,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.

INTRODUCTION

There are several obstacles to the spread of networked appliances that can be overcome by the concept of a Network Adapter described in this standard. As Home Networking technology is rapidly evolving, network functions which are pre-installed in home electrical appliances can easily become obsolete and may be difficult to upgrade. Many appliances strictly limit resources such as the CPU, power capacity, and memory to achieve cost savings. If all network functions are embedded in Home Networked appliances, this could result in a higher cost for new appliances and an additional barrier to wide adoption of such systems. In addition, when consumers want to add a new appliance to the network, they are forced to choose equipment with the same interconnecting systems as the existing network or add a router or gateway which can interconnect different systems.

To solve these problems, the network functions are divided into two parts. Since functions from OSI layer 1 to 7 (refer to ISO/IEC 7498 in Bibliography) are necessary to network home electrical appliances (including both multimedia equipment and household appliances such as televisions, computers, refrigerators, washing machines, and sensors), network functions from OSI layer 1 to 6 and most of layer 7 reside in an external Network Adapter and only a small part of layer 7 resides in the home appliances.

The advantages of applying this standard are:

- Users can upgrade a Home Network by simply changing the Network Adapters.

  NOTE 1 For example, when an end-user wants to have higher QoS media.

- An electrical appliance without embedded network functions can be connected to an existing Home Network with a Network Adapter.

  NOTE 2 For example, when an end-user wants to utilize some of the network application functions (i.e. energy conservation, etc) on an appliance which does not have all of the network function integrated.

- By selecting Network Adapters which use the same interconnecting system as the existing Home Network, routers or the gateways can be avoided.

  NOTE 3 For example, when an end-user's network is a powerline network, but the appliance the user wants to connect to has only an RF network connection.

  NOTE 4 For example, when an end-user's network is based on home networking standard "A" (layer 1-7), but the appliance the user wants to connect utilizes a home networking standard "B" (layer 1-7).

- Home appliance manufacturers can produce products that can be connected to Home Networks with minimal cost increases since most of the network functions are not required to be embedded in the appliance.

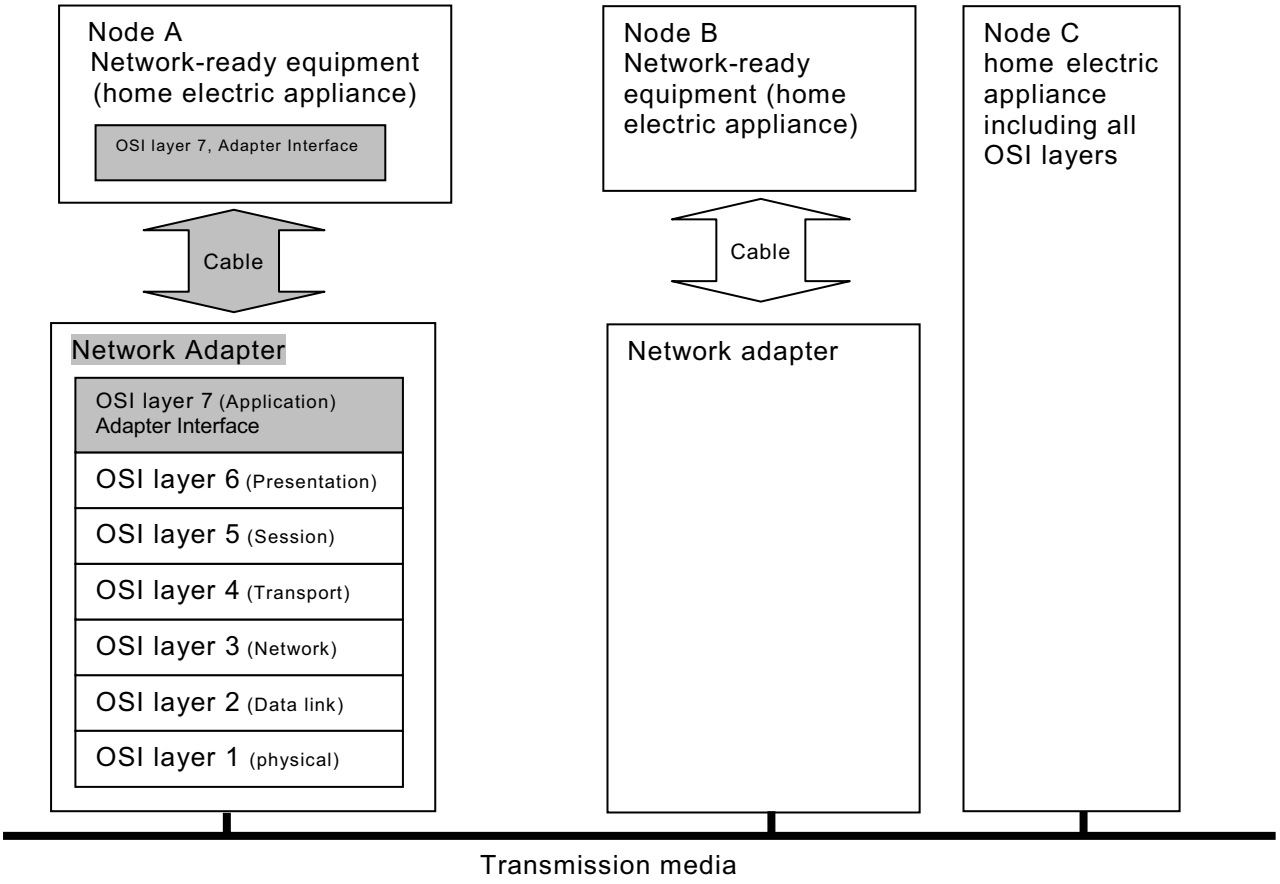
  NOTE 5 This standard is helpful for standardizing the manufacturing process for including the network function in appliances- especially when the market has a low penetration of appliances that are network-ready.

- Device objects are based on the same object-oriented methodology used in almost all existing network protocols.

MULTIMEDIA HOME NETWORK – NETWORK INTERFACES FOR NETWORK ADAPTER

1 Scope

This International Standard specifies the requirements for the characteristics of the Network Adapter itself and the interface between the Network Adapter and Network-ready equipment as shown in Figure 1. Data exchanged between the Network Adapter and Network-ready equipment are basically for HES Class1. This standard does not specify the Home Networking Protocol by OSI layer 1-6 in the Network Adapter and any implementation of the software stack and hardware.



NOTE Gray colored portions are standardized.

Figure 1 – The specified portions

2 Normative references

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.

None.