IEC 62514

Edition 2.0 2024-09

INTERNATIONAL STANDARD

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Multimedia gateway in home networks – Guidelines

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 33.160.60; 35.110; 35.200

ISBN 978-2-8322-9572-4

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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MULTIMEDIA GATEWAY IN HOME NETWORKS – GUIDELINES

FOREWORD

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IEC 62514 has been prepared by technical area 18: Audio, video and multimedia applications for end-user network, of IEC technical committee 100: Audio, video and multimedia systems and equipment. It is an International Standard.

This second edition cancels and replaces the first edition published in 2010. This edition constitutes a technical revision.

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

a) addition of new multimedia processing functions and requirements the HMG shall support, including adaptive multimedia processing, audio/video remote processing, and play function enhancement, in Clause 6;
b) addition of home automation functions and requirements of audio/video analysis, recognition and alarm services based on AI technologies in Clause 7;
c) addition of upgrade function and requirements of HMG in Clause 12.

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

Draft	Report on voting
100/4160/FDIS	100/4175/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

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INTRODUCTION

In the smart-home system, in order to meet the various requirements of home intelligence, all kinds of communication devices (computers, consumer-electrical products, etc.) and multimedia devices (TVs, surveillance cameras, etc.) are integrated into a home network. Such a network (comprising home information, entertainment, control services, etc.) thus forms a system of information exchange with outside networks.

In a home network system, terminal devices such as information devices, communication devices, entertainment devices, household appliances, meters of gas, water and electricity, health-care equipment, and lighting and security systems are interconnected through the Internet of Things (IoT) technology to implement the network management and services and share the resources and services in the network. Based on the interconnection of terminal devices, home network systems can also provide comprehensive multimedia processing services through the use of multi-screen interactive services, remote access, image recognition, and other audio and video processing technologies.

The multimedia services and the management for devices mentioned above can be performed through a home multimedia gateway.

MULTIMEDIA GATEWAY IN HOME NETWORKS – GUIDELINES

1 Scope

This document describes the general guidelines for typical applications of the home multimedia gateway in home networks supporting IP networking.

This document specifies recommended functions and services to be supported by the home multimedia gateway and, where appropriate, refers to existing standards supported in the market. For general requirements, it is expected that widely adopted standards and technologies will be considered by implementers.

This document gives supplementary applications to the IEC 62481 series, which specifies a central management model in home networks supporting various interfaces on the LAN side and on the WAN side (optional).

This document is applicable to home multimedia gateways in the home network or networks of similar environments.

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 (all parts), *Digital living network alliance (DLNA) home networked device interoperability guidelines*

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

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

ISO/IEC 29341 (all parts), *Information technology – UPnP Device Architecture*

ISO/IEC 29341-1, *Information technology – UpnP Device Architecture – Part 1: UpnP Device Architecture Version 1.0*

RFC 2663, *IP Network Address Translator (NAT) Terminology and Considerations*

RFC 3022, *Traditional IP Network Address Translator (Traditional NAT)*

IEEE 802.1Q™, *IEEE standard for Local and metropolitan Area Networks – Bridges and Bridge Networks*