ISO/IEC 30100-3

Edition 1.0 2016-04

INTERNATIONAL STANDARD

colour inside

Information technology – Home network resource management – Part 3: Management application



ISO/IEC 30100-3:2016-04(en)



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ISO/IEC 30100-3

Edition 1.0 2016-04

INTERNATIONAL STANDARD

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Information technology – Home network resource management – Part 3: Management application

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ICS 35.200

ISBN 978-2-8322-2904-0

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INFORMATION TECHNOLOGY – HOME NETWORK RESOURCE MANAGEMENT –

Part 3: Management application

FOREWORD

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International Standard ISO/IEC 30100-3 was prepared by subcommittee 25: Interconnection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology.

The list of all currently available parts of the ISO/IEC 30100 series, under the general title *Information technology – Home network resource management*, can be found on the IEC website.

This International Standard has been approved by vote of the member bodies, and the voting results may be obtained from the address given on the second title page.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

The ISO/IEC 30100 series of standards specifies an abstract model for remote management of home networks conforming to the Home Electronic System (HES) architecture specified in ISO/IEC 14543-2-1. An HES consists of a collection of devices that are able to interwork via a common internal network. In a home environment several HES networks may operate concurrently each with separate control and management methods. This part of ISO/IEC 30100 specifies the architecture and the base methodology to support applications that may span multiple different HES networks. Home resource management allows uniform fault processing, diagnostics and configuration management of HES elements in home environment.

This standard specifies an architecture for the home network resource management, a home resource model for transparent system configuration and a diagnostic processing in the home network.

Currently, ISO/IEC 30100, *Information technology – Interconnection of information technology equipment – Home Network Resource Management*, consists of the following parts:

Part 1: Requirements

Part 2: Architecture

Part 3: Management application

ISO/IEC 30100 is applicable to

- a management server located at a home network service provider,
- an apartment complex server, located in an office at the of apartment complex office,
- a home residential gateway or set top box (STB).

INFORMATION TECHNOLOGY – HOME NETWORK RESOURCE MANAGEMENT –

Part 3: Management application

1 Scope

This part of ISO/IEC 30100 specifies a control and management interface for the integrated home network resources at the top of the interoperability framework specified by ISO/IEC 18012-1. Methods are specified for controlling and managing home network resources through a consistent interface regardless of the underlying home network middleware technologies. Based on the home resource management interface, a management application specifies HES device control services and fault management services. This part of ISO/IEC 30100 specifies the communications data formats and functions for messages sent between the objects of a resource management process and the objects of one or more management applications.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 14543-2-1, *Information technology – Home electronic system (HES) architecture – Part 2-1: Introduction and device modularity*

ISO/IEC 18012-1:2004, *Information technology – Home electronic system – Guidelines for product interoperability – Part 1:Introduction*

ISO/IEC 30100-2, *Information technology – Home network resource management – Part 2: Architecture*[1]

3 Terms, definitions and abbreviations

3.1 Terms and definitions

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

3.1.1
apartment complex server
computer remotely managing services for residents in a multiunit dwelling

apartment complex office
management facility that provides services for residents in a multiunit dwelling

3.1.2
application
field of use of home resource management process

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1 To be published.

3.1.3
class
set of instances of home resource

3.1.4
device
distinct physical unit on a network that performs a specific function (a set of functions) in a particular context

Note 1 to entry: A device can either be an end node on the network, or an intermediate node (as in the case of a network gateway device connecting two distinct physical networks).

3.1.5
domain
range of validity of a resource object

3.1.6
HES entity
logical component that has a specified functionality in the HES architecture

Note 1 to entry: The HES architecture is specified in ISO/IEC 14543-2-1.

3.1.7
HES interoperability framework
collection of standards defining device and network interoperability for homes as specified in the ISO/IEC 14543 series

3.1.8
home residential gateway
interface between external networks and home networks

3.1.9
home resource
managed object that can be used for home network services

3.1.10
home resource management interface
logical connection point between management application and home resource management process

3.1.11
home resource management process
element that performs information processing for a particular management application

3.1.12
home resource model
abstract, formal representation of resource objects in a home environment

Note 1 to entry: Resource objects include resource properties, relationships and the operations that can be performed on them.

3.1.13
home resource provider interface
data transfer between resource information provider and home resource management process

3.1.14
instance
example

Note 1 to entry: This term is used in object-oriented programming.

3.1.15
management information
set of components used either in a management application or in a resource management process

3.1.16
network
interconnected devices sharing a common communications protocol

3.1.17
network middleware
software that links an operating system to a communications protocol

3.1.18
object
abstract element representing device functions and data stored within the device

Note 1 to entry: The functions and data contained within an object (referred to as "properties") can be executed, read or modified as appropriate for the property by "messages" sent from other objects. A message causes a "method" within the object to be invoked. This may result in access to an internal data structure or the execution of a subroutine or both. A value may be returned by the recipient object.

3.1.19
physical space
some arbitrary set of reference co-ordinates of a home resource in the real world

3.1.20
resource information provider
functions for home resource management process to control HES entities

Note 1 to entry: Collects data from HES entities and transfers the collected data to a home resource management process.

3.1.21
resource object
managed unit located within the resource management process specified by the home resource model

Note 1 to entry: The resource object includes methods for accessing the properties of the management process and/or interacting with other objects. A resource object can contain one or more HES entities.

3.1.22
resource relation object
managing unit located within the resource management process by the home resource model

3.1.23
service
field of use of an HES

3.1.24
set top box
interface between the external service and home equipment

3.2 Abbreviations

AFM Automatic Fault Management

BNF Backus-Naur Form

DM Device Management

HAN Home Area Network