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TECHNICAL REPORT

Information technology – Terminology for intelligent homes

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INFORMATION TECHNOLOGY – TERMINOLOGY FOR INTELLIGENT HOMES

FOREWORD

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ISO/IEC TR 29108, which is a technical report, has been prepared by subcommittee 25: Interconnection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology. It is intended that future versions of this technical report will be developed in collaboration with ITU-T.

This Technical Report 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.

INTRODUCTION

ISO/IEC TR 29108 contains the recommended as well as other existing definitions of terms used in standards and technical reports relevant to intelligent homes. Existing definitions use the exact wording of the source and may thus be both formally incorrect as well as contain spelling mistakes.

In addition, necessary information that is not in the SOURCE has been added in brackets. Also Notes # to entry below the [SOURCE reference] are additions of this Technical Report.

INFORMATION TECHNOLOGY – TERMINOLOGY FOR INTELLIGENT HOMES

1 Scope

ISO/IEC TR 29108 specifies the terminology recommended for future use in International Standards and other specifications for intelligent homes. In addition, it provides a collection of terms and definitions as already used and defined in relevant International Standards, Technical Specifications, Technical Reports and Recommendations developed by ISO, IEC, and ITU-T.

2 Structure

The first definition of each term, i.e. the one with the number 3.1.n.1 is the definition recommended by this Technical Report. This can either be one from an International Standard or other specification, or one defined by this Technical Report. If more than one definition for a term exists, they are ordered hierarchically, in decreasing order of preference. Note that a definition may apply to a very specific environment, but not be preferred, since it is not generic.

The source of the definition is indicated at the bottom of each entry, if applicable. If no source is provided the term and definition is being defined by this Technical Report. Cited definitions use the same wording as the source, so they may contain both formal and spelling errors. A source given at the last, but one line of the definition is part of the citation.

The Bibliography at the end of the document consists of two parts. The first part lists International Standards from which terms and definitions are cited in Clause 3 below. The second part contains related International Standards and other specifications.

3 Terms, definitions and abbreviations

3.1 Terms and definitions

The following terms and definitions have been compiled in the field of intelligent homes for the convenience of standards' writers and users.

3.1.1 Action

3.1.1.1
action
Command exposed by a service. Takes one or more input or output arguments. May have a return value. For more information, see clauses on description and control (in ISO/IEC 29341-1).

[SOURCE: ISO/IEC 29341-1:2011, definition in Clause 6]

3.1.2 Action primitive

3.1.2.1
action primitive
fundamental unit of software invocation that results in a single defined and observable state change of the object on which it is invoked

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.1]

3.1.3 Application

3.1.3.1
application
field of use of an HES

Note 1 to entry: An HES may support more than one application.

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.1]

3.1.3.2
application
field of use of an HES. An HES may support more than one application

[SOURCE: ISO/IEC TR 15044:2000, definition 2.1]

3.1.3.3
application (in the sense of network application)
system, including its associated transmission method, which is supported by telecommunications cabling

[SOURCE: ISO/IEC 11801:2002, definition 3.1.2]

[SOURCE: ISO/IEC 14543-3-1:2006, definition 3.1.1]

3.1.4 Application Data (ADATA)

3.1.4.1
application data
ADATA
data region for messages exchanged by communication middleware

Note 1 to entry: Maximum size is 256 bytes.

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.1; ISO/IEC 14543-4-2:2008, definition 3.1.1]

3.1.5 Application Data Counter (ADC)

3.1.5.1
application data counter
ADC
indicates the size of the ADATA region

Note 1 to entry: The size is variable in 1-byte increments.

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.2; ISO/IEC 14543-4-2:2008, definition 3.1.2]

3.1.6 Application entity

3.1.6.1
application entity
active element, within the application process, ambodying a set of capabilities which is pertinent to OSI and which is defined for the application layer, that corresponds to a specific application-entity type (without any extra capabilities being used)

[SOURCE: ISO/IEC 7498-1, 7.1.1.1]

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.1.1]

3.1.7 Application interoperability model

3.1.7.1
application interoperability model
AIM
application model specified this standard (in ISO/IEC 18012-2)

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.3]

3.1.8 Application model

3.1.8.1
application model
representation of the components, structure and interactions of a system focused on a particular domain of use

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.2]

3.1.9 Application object

3.1.9.1
application object
HES object located within the HES device application process

3.1.9.2
application object
an HES object located within the HES device application process

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.2; ISO/IEC TR 15044:2000, definition 2.2]

3.1.9.3
application object
AOJ
model of information to be disclosed to the network from information owned by the communications processing block, or an access procedure model

Note 1 to entry: The information or control target owned by each device is specified as a property and the operating method (setting, browsing) for this is specified as a service.

Note 2 to entry: AOJs are used when class or instance is not considered.

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.3]

3.1.9.4
application object
AOJ
model of information to be disclosed to the network from information owned by the communications processing block, or an access procedure model

Note 1 to entry: The information or control target owned by each device is specified as a property and the operating method (setting, browsing) for this is specified as a service. AOJs are used when class or instance is not considered.

[SOURCE: ISO/IEC 14543-4-2:2008, definition 3.1.3]

3.1.10 Application process

3.1.10.1
application process
element within an HES which performs the information processing for a particular application

3.1.10.2
application process
element within an HES which performs the information processing for a particular application

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.3; ISO/IEC TR 15044:2000, definition 2.3]

3.1.10.3
application process
element within a real open system which performs the information processing for a particular application

[SOURCE: ISO/IEC 7498-1, 4.1.4]

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.1.2]

3.1.11 Application program

3.1.11.1
application program
element within an installed system (i.e. in a device) which performs information processing for a particular application and ensures the operations needed to execute the application

[SOURCE: ISO/IEC 14543-3-4:2007, definition 3.1.12]

3.1.12 Application Programming Interface (API)

3.1.12.1
application programming interface
API
boundary across which application software uses facilites of programming languages to invoke services

Note 1 to entry: See ISO/IEC JTC 1 Standing Document "Guidelines for API Standardization" for a complete discussion of application programming interfaces.

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.4]

3.1.12.2
API
application programming interface
collection of invocation methods and associated parameters used by one piece of software to request actions from another piece of software

[SOURCE: ISO/IEC 18012-1:2004, definition 3.1.1]

3.1.12.3
application programming interface
API
assembly of interface functions for middleware

Note 1 to entry: API makes it easy to operate middleware for designers.

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.4; ISO/IEC 14543-4-2:2008, definition 3.1.4]

3.1.13 Application Property Code (APC)

3.1.13.1
application property code
APC
code value related to application property

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.5]

3.1.14 Application Property value Data (APD)

3.1.14.1
application property value data
APD
data value related to application property code (APC), such as status notification or specific setting and control by an application service code (ASC)

Note 1 to entry: Detailed specifications are provided for the size, code value, etc. of the APD for each APC.

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.6]

3.1.14.2
application property value data
APD
is a data value related to application property code (APC), such as a status notification or specific setting and control by an application service code (ASC)

Note 1 to entry: Detailed specifications are provided for the size, code value, etc. of the APD for each APC.

[SOURCE: ISO/IEC 14543-4-2:2008, definition 3.1.5]

3.1.15 Application protocol

3.1.15.1
application protocol
standardized protocol for the exchange of information between application processes in an HES; it is transported without interpretation by the home network resources

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.4; ISO/IEC TR 15044:2000, definition 2.4]

3.1.16 Application Service Code (ASC)

3.1.16.1
application service code
ASC
code value related to application service

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.7]

3.1.17 Architecture

3.1.17.1
architecture
conceptual structure of a system

Note 1 to entry: A system may consist of several interacting subsystems, each with its own architecture.

3.1.17.2
architecture
conceptual structure of systems that are to communicate with each another

[SOURCE: ISO/IEC TR 15044:2000, definition 2.5]

3.1.17.3
architecture
specific configuration of hardware and software elements in a system

[SOURCE: IEC 61508-4:2010, definition 3.3.4]

[SOURCE: ISO/IEC 14762:2009, definition 3.1.1]

3.1.18 Area address

3.1.18.1
area address
part of the individual address that specifies the area in which the device is mounted

[SOURCE: ISO/IEC 14543-3-2:2006, definition 3.1.3]

3.1.19 Argument

3.1.19.1
argument
Parameter for action exposed by a service. May be in xor out. For more information, see clauses on Description and Control (in ISO/IEC 29341-1).

[SOURCE: ISO/IEC 29341-1:2011, definition in Clause 6]

3.1.20 Authentication

3.1.20.1
authentication
means for certifying that the entity sending a message is what or who it purports to be and confirmation that the message is identical to that which was sent

[SOURCE: ISO/IEC 14762:2009, definition 3.1.2]

3.1.21 Authorization

3.1.21.1
authorization
mechanism to ensure that the entity or person accessing information, functions or services has the authority to do so

[SOURCE: ISO/IEC 14762:2009, definition 3.1.3]

3.1.22 Bridge

3.1.22.1
bridge
interface between dissimilar lower layer networks

Note 1 to entry: A bridge may provide services at layer 1 (physical layer) or layer 2 (data link layer).

[SOURCE: ISO/IEC 15045-2:2012, definition 3.1.2]

3.1.22.2
bridge
functional unit interconnecting two home network systems that use the same network layer protocol but where there may be some differences in the link layer protocol

[SOURCE: ISO/IEC TR 15044:2000, definition 2.6]

3.1.23 Brown goods

3.1.23.1
brown goods
A/V devices that are mainly used for entertainment, for example, television or DVD recorder

[SOURCE: ISO/IEC 24767-1:2008, definition 2.1.1]

3.1.24 Bus

3.1.24.1
bus
common or shared communication path or highway

Note 1 to entry: A means of interconnecting devices under a single administration, such as a LAN comprising devices sharing a common set of pathways

Note 2 to entry: A distinction may be drawn between “logical” and “physical” buses when bus topologies are considered.

[SOURCE: ISO/IEC 15045-2:2012, definition 3.1.3]

3.1.25 Bus access unit (BAU)

3.1.25.1
bus access unit
BAU
contains all protocol layers plus the optional internal user application

[SOURCE: ISO/IEC 14543-3-4:2007, definition 3.1.2]

3.1.26 Centralised device group

3.1.26.1
centralised device group
set of IGRS Devices with one IGRS device acting as the master

Note 1 to entry: The master is responsible for managing the setup, for dismissing a device group, and for processing a join request from other devices.

Note 2 to entry: The master device and other IGRS devices in such a device group form a centralised or master-slave relationship.

[SOURCE: ISO/IEC 14543-5-1:2010, definition 3.1.1; ISO/IEC 14543-5-4:2010, definition 3.2]

3.1.27 Classes of home control systems

3.1.27.1
classes of home control systems
characterization of home control systems based on their transport capabilities

[SOURCE: ISO/IEC TR 15044:2000, definition 2.7]

3.1.28 Client identifier

3.1.28.1
client identifier
unique identifier associated with a Client on an IGRS device to which that Client belongs

[SOURCE: ISO/IEC 14543-5-1:2010, definition 3.1.2; ISO/IEC 14543-5-4:2010, definition 3.3]

3.1.29 Co-existence

3.1.29.1
co-existence
two or more home networking systems co-exist when they can be used and operate without interfering with one-another

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.7]

3.1.29.2
co-existence
two or more networks within premises that do not interfere with one another

[SOURCE: ISO/IEC 18012-1:2004, definition 3.1.2]

3.1.29.3
co-existence
no interference between different pieces of equipment on the premises

Specifically, the operation of one RG does not interfere with the operation of another RG

[SOURCE: ISO/IEC 15045-1:2004, definition 3.1.1]

3.1.30 Common Interoperability Framework (CIF)

3.1.30.1
common interoperability framework
CIF
abstract intermediate language expressions for tranlating HAN or WAN-specifid messages

Note 1 to entry: A common interoperability framework includes

a) an HES-AIL (Abstract Intermediate Language), and

b) a set of network-specific Generic Interworking Function (GIWF) processes to express (i.e., translate) any message to or from any specific HAN or WAN message.

[SOURCE: ISO/IEC 15045-2:2012, definition 3.1.4]

3.1.31 Communication middleware block

3.1.31.1
communication middleware block
this middleware is arranged from data link layer to application layer and performs communications processing according to the protocol specified in ISO/IEC 14543-4-1 and ISO/IEC 14543-4-2

Note 1 to entry: The major features of ISO/IEC 14543-4 are implemented by communications middleware.

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.8]

3.1.32 Communication mode

3.1.32.1
communication mode
mode describing the relationship between communication points upon which the communication relies: one-to-many connectionless (multicast), one-to-all connectionless (broadcast), one-to-one connectionless, one-to-one connection-oriented

[SOURCE: ISO/IEC 14543-3-4:2007, definition 3.1.9]

3.1.33 Communication processing block

3.1.33.1
communication processing block
one processing block for the communications middleware; this block performs communication protocol processing to facilitate remote device control/monitoring processing for application software, stores information for the above and controls various information on the self-device as well as other device statuses

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.9]

3.1.34 Communications middleware block

3.1.34.1
communications middleware block
this middleware is arranged from data link layer to application layer and performs communications processing according to ISO/IEC 14543-4

Note 1 to entry: The major features of ISO/IEC 14543-4 are implemented by communications middleware.

[SOURCE: ISO/IEC 14543-4-2:2008, definition 3.1.6]

3.1.35 Communications processing block

3.1.35.1
communications processing block
one processing block for the communications middleware; this block performs communication protocol processing to facilitate remote device control/monitoring processing for application software, stores information for the above and controls various information on the self-device as well as other device statuses

[SOURCE: ISO/IEC 14543-4-2:2008, definition 3.1.7]

3.1.36 Compatibility

3.1.36.1
compatibility
ability of two or more networks within premises to be mutually tolerant and not interfere with one another

Note 1 to entry: The networks as co-existent, but they not necessarily interoperable.

[SOURCE: ISO/IEC 15045-2:2012, definition 3.1.5]

3.1.37 Component

3.1.37.1
component
logical subunit of a larger, encompassing concept

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.8]

3.1.37.2
component
logical subunit of a larger, encompassing concept

Note 1 to entry: For example, the concept of Interoperability is subdivided into constituent components such as safety, management, and operation. These constituent components are further subdivided within their respective sections. In the context of the HES-gateway, the term component is also used to refer to logical subunits of system architecture concepts, such as the components of a networking implementation (e.g., addressing)

[SOURCE: ISO/IEC 15045-2:2012, definition 3.1.6]