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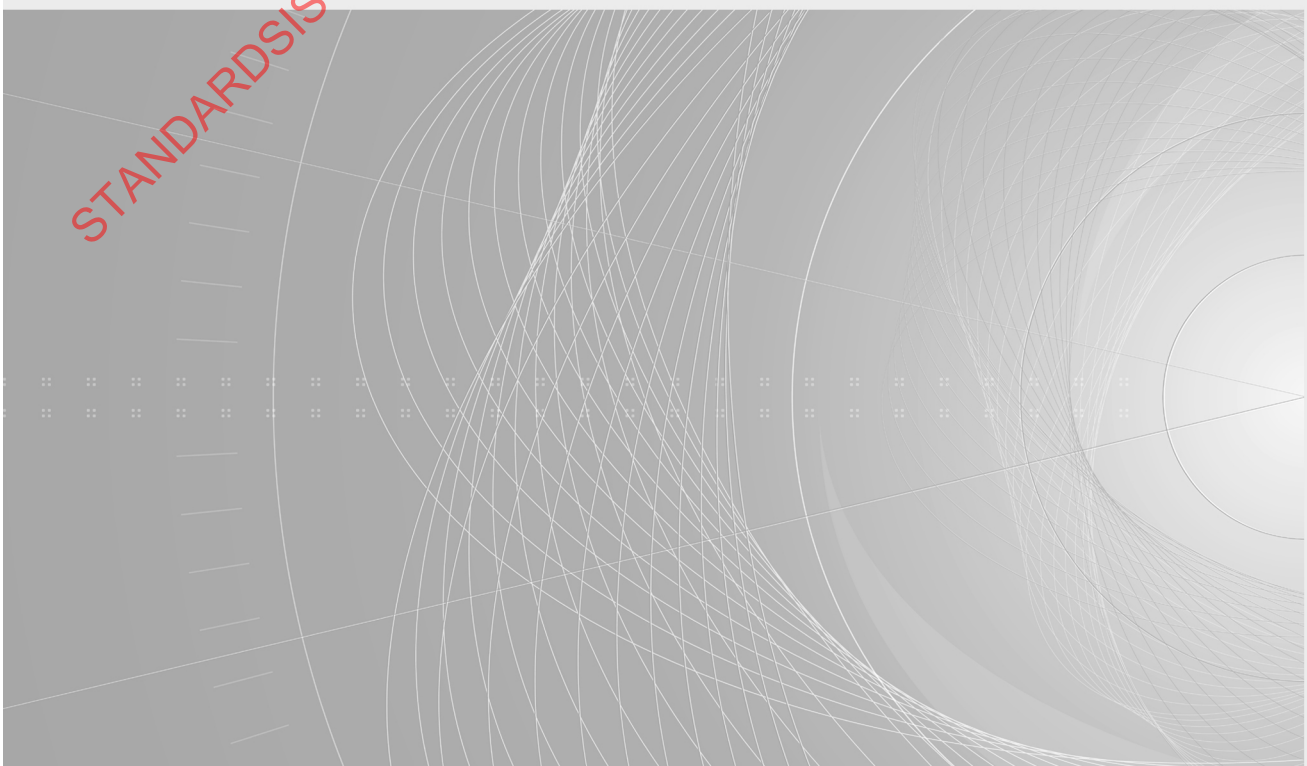
Edition 1.0 2013-03

TECHNICAL REPORT

Information technology – Terminology for intelligent homes



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IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

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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 translating 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]

3.1.37.3
component
logical subunit of a larger, encompassing concept

Note 1 to entry: The concept of interoperability is broken down into constituent components such as safety, management and operation. These constituent components are further broken down within their respective sections. The term component is also used to refer to logical subunits of system architecture concepts, such as the components of a networking implementation (for example, addressing).

[SOURCE: ISO/IEC 18012-1:2004, definition 3.1.3]

3.1.38 Concurrent events

3.1.38.1
concurrent events
two or more events queued for processing in the interval between any two scheduled input processing or output processing operations of an application object

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.9]

3.1.39 Confidentiality

3.1.39.1
confidentiality
property that information is not made available or disclosed to unauthorized individuals, entities or processes

[SOURCE: ISO/IEC 24767-1:2008, definition 2.1.2; ISO/IEC 24767-2:2009, definition 3.1.1]

3.1.40 Connection

3.1.40.1
connection
association established between functional units for data transmission across a network (or part of a network) for the purpose of communication between the units; the association is explicitly established at some point in time and exists until explicitly ended

Note 1 to entry: Data transmission includes, in this context, audio, video and other information in either analogue or digital form.

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.5]

3.1.40.2
connection
association established between two peer entities across a network (or part of a network) for the purpose of communication between the entities. The association is explicitly established at some point in time, and exists until explicitly ended

[SOURCE: ISO/IEC TR 15044:2000, definition 2.8]

3.1.41 Connection-mode service

3.1.41.1
connection-mode service
service providing communication between two entities within the context of a connection established between the entities

[SOURCE: ISO/IEC TR 15044:2000, definition 2.9]

3.1.42 Connection-mode transmission

3.1.42.1
connection-mode transmission
(N)-data-transmission in the context of an (N)-connection

[SOURCE: ISO/IEC 7498-1, 5.3.1.17]

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.1.3]

3.1.43 Connectionless-mode service

3.1.43.1
connectionless-mode service
service providing communication between two entities not within the context of a connection established between the entities

[SOURCE: ISO/IEC TR 15044:2000, definition 2.10]

3.1.44 Connectionless-mode transmission

3.1.44.1
connectionless-mode transmission
(N)-data-transmission not in the context of an (N)-connection and not required to maintain any logical relationship between (N)-service-data-units

[SOURCE: ISO/IEC 7498-1, 5.3.1.18]

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.1.4]

3.1.45 Control channel

3.1.45.1
control channel
communication channel that is established between two or more entities for the primary purpose of exchange of HES control and monitoring messages

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.6]

3.1.45.2
control channel
communication channel that is established between two or more entities for the primary purpose of exchange of HES control and monitoring messages

[SOURCE: ISO/IEC TR 15044:2000, definition 2.11]

3.1.46 Controller

3.1.46.1
controller
device with the capability of controlling and possibly monitoring other devices

3.1.46.2
controller
any device with the capability of controlling and possibly monitoring other devices

[SOURCE: ISO/IEC TR 15044:2000, definition 2.12]

3.1.47 Control point

3.1.47.1
control point
Retrieves device and service descriptions, sends actions to services, polls for service state variables, and receives events from services.

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

3.1.48 DA data

3.1.48.1
DA data
node address of the destination of messages between lower-layer communications software

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.10; ISO/IEC 14543-4-2:2008, definition 3.1.8]

3.1.49 Data authentication

3.1.49.1
data authentication
service used to ensure that the source of the data claimed by a party to a communication is correctly verified

[SOURCE: ISO/IEC 24767-1:2008, definition 2.1.3; ISO/IEC 24767-2:2009, definition 3.1.2],

3.1.50 Datagram

3.1.50.1
datagram
full sequence of elements (physical symbols) transporting a frame on the physical medium

[SOURCE: ISO/IEC 14543-3-2:2006, definition 3.1.7]

3.1.51 Data integrity

3.1.51.1
data integrity
property that data has not been altered or destroyed in an unauthorized manner

[SOURCE: ISO/IEC 24767-1:2008, definition 2.1.4; ISO/IEC 24767-2:2009, definition 3.1.3]

3.1.52 Data Link Address (DLA)

3.1.52.1
data link address
DLA
address permitting unique identification of a node in a home network

Note 1 to entry: This is a logical address that is defined separately from the node address native to lower-layer communications software; it consists of a NetID and NodeID.

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.11; ISO/IEC 14543-4-2:2008, definition 3.1.9]

3.1.53 Data link data

3.1.53.1
data link data
data that is composed of DHD, SDLA, DDLA, ADC and ADATA

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.12; ISO/IEC 14543-4-2:2008, definition 3.1.10]

3.1.54 Data link Data Counter (DDC)

3.1.54.1
data link data counter
DDC
specifies the order of split messages, indicates end split of message and stipulates split-transmission message identifiers

[SOURCE: ISO/IEC 14543-4-2:2008, definition 3.1.12]

3.1.54.2
data link data counter
DDC
specifies order of split message, indicates end split of message and stipulates split-transmission message identifier

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.14]

3.1.55 Data link frame

3.1.55.1
data link frame
frame that is composed of DDC, DHD, SDLA, DDLA, ADC and ADATA

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.13; ISO/IEC 14543-4-2:2008, definition 3.1.11]

3.1.56 Data link Header (DHD)

3.1.56.1
data link header
DHD
four kinds of data are included:

– the first data is the message format for the ADATA/PADATA section;
– the second specifies secure message or plain message;
– the third specifies whether DDLA is a broadcast address or an individual address;
– and the fourth constitutes a routing hop counter

[SOURCE: ISO/IEC 14543-4-2:2008, definition 3.1.13]

3.1.56.2
data link header
DHD
four kinds of data are included:

– first data is the message format for the ADATA/PADATA section;
– second data specifies secure message or plain message;
– third data specifies DDLA is a broadcast address or an individual address;
– fourth data constitutes a routing hop counter

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.15]

3.1.57 Data link router

3.1.57.1
data link router
node used to connect subnets

Note 1 to entry: It connects the subnets of different lower-layer communications protocols (for different protocols, regardless of transmission media type) or divides the same protocol into subnets. The lower-layer communications protocol is connected seamlessly on the system using routing processing based on data link addresses as a function.

[SOURCE: ISO/IEC 14543-4-2:2008, definition 3.1.14]

3.1.58 Data link split frame

3.1.58.1
data link split frame
messages that are exchanged between protocol difference absorption processing blocks

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.16]

3.1.58.2
data link split frame
messages that are exchanged between protocol difference absorption processing blocks are called data link split frames

[SOURCE: ISO/IEC 14543-4-2:2008, definition 3.1.15]

3.1.59 Device

3.1.59.1
device
distinct physical unit on a network

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 gateway, router, or bridge device connecting two distinct physical networks).

[SOURCE: ISO/IEC 15045-2:2012, definition 3.1.7]

3.1.59.2
device
distinct physical unit on a network

Note 1 to entry: It 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).

[SOURCE: ISO/IEC 18012-1:2004, definition 3.1.4; ISO/IEC 18012-2:2012, definition 3.1.10]

3.1.59.3
device
physical implementation of functions belonging to one or more functional groupings providing a service directly for an end-user

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.7; ISO/IEC TR 15044:2000, definition 2.13]

3.1.59.4
device
Logical device. A container. May embed other logical devices. Embeds one or more services. For more information, see clause on Description (in ISO/IEC 29341-1).

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

3.1.60 Device address

3.1.60.1
device address
unique identifier for every device in a subnetwork; the device address is an 8-bit value

Note 1 to entry: Figure 1 shows the relationship between individual address, subnetwork address, area address, line address and device address

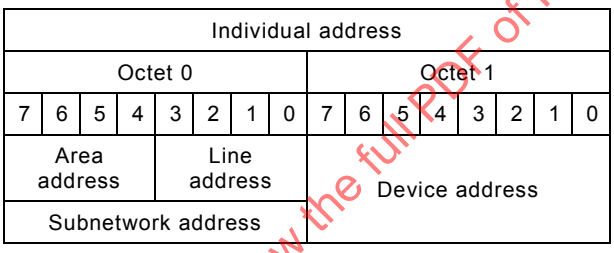

Figure 1 – Individual address

[SOURCE: ISO/IEC 14543-3-2:2006, definition 3.1.5]

3.1.61 Device application process

3.1.61.1
device application process
element within a device that performs information processing for a particular application; device application processes can represent manual, automated, computerised or physical processes

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.8; ISO/IEC TR 15044:2000, definition 2.14]

3.1.61.2
device application process
an element within a device which performs information processing for a particular application; it can represent a manual, automated, computerised or physical process

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.13]

3.1.62 Device description

3.1.62.1
device description
Formal definition of a logical device, expressed in the UPnP™ Template Language. Written in XML syntax. Specified by a UPnP vendor by filling in the placeholders in a UPnP Device Template, including, e.g., manufacturer name, model name, model number, serial number, and URLs for control, eventing, and presentation. For more information, see clause on Description (in ISO/IEC 29341-1).

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

3.1.63 Device group

3.1.63.1
device group
multiple IGRS devices that are organised into a logical group through the device group management mechanism specified in ISO/IEC 14543-5-1

Note 1 to entry: Each IGRS device in a device group follows common interaction rules. Two types of device groups are defined: peer-to-peer device group and centralised (master-slave) device group.

[SOURCE: ISO/IEC 14543-5-4:2010, definition 3.4]

3.1.63.2
device group
multiple IGRS Devices that are organised into a logical group through the device group management mechanism in the IGRS specification

Note 1 to entry: Each IGRS Device in a Device Group follows common interaction rules. Two types of Device Groups are defined: peer-to-peer Device Group and centralised (master-slave) Device Group.

[SOURCE: ISO/IEC 14543-5-1:2010, definition 3.1.3]

3.1.64 Device ID

3.1.64.1
device ID
unique number assigned to each node

Note 1 to entry: The device ID is retained and managed by the communications middleware block and normally assigned by application software.

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.17]

3.1.65 Device identifier

3.1.65.1
device identifier
globally unique device identifier associated with one IGRS device

[SOURCE: ISO/IEC 14543-5-1:2010, definition 3.1.4; ISO/IEC 14543-5-4:2010, definition 3.5]

3.1.66 Device management

3.1.66.1
device management
procedures to access one specific device. These procedures describe for example the load procedures or reading the state. A detailed knowledge of the device is required for these procedures

[SOURCE: ISO/IEC 14543-3-4:2007, definition 3.1.8]

3.1.67 Device modularity

3.1.67.1
device modularity
property of devices that specifies the extent to which they have been composed out of separate parts called modules

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.9]

3.1.68 Device pipe

3.1.68.1
device pipe
channel used to transfer device interaction messages

Note 1 to entry: This channel is set up through the pipe setup mechanism specified (in ISO/IEC 14543-5-1).

[SOURCE: ISO/IEC 14543-5-1:2010, definition 3.1.5; ISO/IEC 14543-5-4:2010, definition 3.6]

3.1.69 Device type

3.1.69.1
device type
Standard device types are denoted by urn:schemas-upnp-org:device: followed by a unique name assigned by a UPnP Forum working committee. One-to-one relationship with UPnP Device Templates. UPnP vendors may specify additional device types; these are denoted by urn:*domain-name*:device: followed by a unique name assigned by the vendor, where *domain-name* is a domain name registered to the vendor. For more information, see clause on Description (in ISO/IEC 29341-1).

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

3.1.70 Differential mode

3.1.70.1
differential mode
PL signals are injected between phase and neutral

[SOURCE: ISO/IEC 14543-3-5:2007, definition 3.1.1]

3.1.71 Distributed power supply

3.1.71.1
distributed power supply
bus is powered in a distributed way by a number of the devices connected to the line (compared to a centralised power supply)

3.1.71.2
distributed power supply
the bus is powered in a distributed way by a number of the devices connected to the line (compared to a centralised power supply)

[SOURCE: ISO/IEC 14543-3-6:2007, definition 3.1.3]

3.1.72 Distributed gateway

3.1.72.1
distributed gateway
HES-gateway implemented as separate but interconnected modular elements

[SOURCE: ISO/IEC 15045-2:2012, definition 3.1.8]

3.1.73 Disturbed communication

3.1.73.1
disturbed communication
where for any reason a message being communicated is incomplete, truncated, contains errors or has the correct format but delivers information which is outside the range of expected parameters for such a message

[SOURCE: ISO/IEC 14762:2009, definition 3.1.4]

3.1.74 Documentation

3.1.74.1
documentation
all instances of product literature, brochures, data sheets, manuals and catalogues in which the product is described, defined, detailed or pictured that may be produced in paper or any electronic format

Note 1 to entry: In this definition, “product” refers to a product, a system, a network or a residential gateway.

[SOURCE: ISO/IEC 15045-1:2004, definition 3.1.2]

3.1.75 Domain

3.1.75.1
domain
range of validity

Note 1 to entry: When the term is used for a more specific concept, it should be qualified. Two examples are the application domain (the range including OSI layer seven and above) and the user domain (the range above OSI layer seven).

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.10]

3.1.75.2
domain
range of validity

Note 1 to entry: When used for a specific concept, the exact domain should be stated, for example application domain, user domain.

[SOURCE: ISO/IEC TR 15044:2000, definition 2.15]

3.1.75.3
domain
range on the network within which information transmission is logically guaranteed

Note 1 to entry: Generally, it is thought that property and security control, including homes and stores, use the same range as a domain, but the domain can be defined by system.

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.18]

3.1.76 End user

3.1.76.1
end user
entity outside the home control system domain that uses the services and functions of the home control system

[SOURCE: ISO/IEC TR 15044:2000, definition 2.16]

3.1.77 Event

3.1.77.1
event
individual output of an application object, typically corresponding to a simple or complex state variable used in the application object

Note 1 to entry: See 6.4 (in ISO/IEC 18012-2:2012).

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.11]

3.1.77.2
event
Notification of one or more changes in state variables exposed by a service. For more information, see clause on Eventing (in ISO/IEC 29341-1)

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

3.1.78 Event bus

3.1.78.1
event bus
message path within the interoperability domain for transferring events between source and destination interoperable application objects

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.12]

3.1.79 External message interface (EMI)

3.1.79.1
external message interface
EMI
collection of messages that together build a generic message interface to each protocol layer of a BAU and any application function

[SOURCE: ISO/IEC 14543-3-4:2007, definition 3.1.15]

3.1.80 File transfer protocol (FTP)

3.1.80.1
file transfer protocol
FTP
IP based protocol (see IETF – Internet Engineering Task Force)

[SOURCE: ISO/IEC 15045-1:2004, definition 3.1.3]

3.1.81 Flow control

3.1.81.1
flow control
function which controls the flow of data within a layer or between adjacent layers

[SOURCE: ISO/IEC 7498-1, 5.8.1.8]

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.1.6]

3.1.81.2
flow control
function that controls the flow of data within a layer. It regulates the rate at which information is exchanged between peer entities

[SOURCE: ISO/IEC TR 15044:2000, definition 2.17]

3.1.82 Frame

3.1.82.1
frame
sequence of octets exchanged between data link layers through the physical layer

[SOURCE: ISO/IEC 14543-3-2:2006, definition 3.1.8]

3.1.83 Functional action

3.1.83.1
functional action
composite of one ore more primitive actions from one or more application objects contained in a single functional object

Note 1 to entry: See 7.3.3 (in ISO/IEC 18012-2:2012)

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.13]

3.1.84 Functional class

3.1.84.1
functional class
collection of objects and actions on objects that model a particular application function within an application domain

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.14]

3.1.85 Functional grouping

3.1.85.1
functional grouping
set of functions performing part of the operations of a home control system

Note 1 to entry: The functions in a functional grouping might be performed in one or more pieces of equipment and the functions of several functional groupings might be performed in one piece of equipment.

[SOURCE: ISO/IEC TR 15044:2000, definition 2.18]

3.1.86 Functional object

3.1.86.1
functional object
logical grouping of some device funtionality

Note 1 to entry: In this standard (in ISO/IEC 18012-2:2012) functional objects are used to model controller entities (hardware or logical devices) in a HES.

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.15]

3.1.87 Functional safety

3.1.87.1
functional safety
freedom from unacceptable risk of harm due to the operation of an HBES, including that resulting from

a) normal operation,

b) reasonably foreseeable misuse,

c) failure,

d) temporary disturbances

Note 1 to entry: See definition 3.1.9 of IEC 61508-4. Part of the overall safety relating to the EUC (equipment under control) and the EUC control system which depends on the correct functioning of the electrical/electronic/ programmable electronic (E/E/PE) safety related systems, other technology safety related systems and external risk reduction facilities.

Note 2 to entry: Definition of IEC/TR 61000-2-1 and IEC/TS 61000-1-2 are taken into account.

[SOURCE: ISO/IEC 14762:2009, definition 3.1.5]

3.1.88 Gateway

3.1.88.1
gateway
interface between dissimilar networks.

Note 1 to entry: A gateway may provide services up to OSI layer seven and above.

Note 2 to entry: The HES-gateway provides protocol and language translation services above layer seven.

[SOURCE: ISO/IEC 15045-2:2012, definition 3.1.9]

3.1.88.2
gateway
interface between dissimilar networks that may provide services up to OSI layer seven and above

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.16]

3.1.88.3
gateway
unit connecting different networks or parts of one network and performing any necessary protocol translation

[SOURCE: ISO/IEC TR 15044:2000, definition 2.19]

3.1.89 Gateway Link (GL)

3.1.89.1
gateway link
GL
full seven-layer protocol stack and the physical bus internal to and specific to the HES-gateway architecture to connect GL modules

Note 1 to entry: The GL is used to communicate the HES-AIL encoded messages (resulting from the GIWF translation process) between HES-link modules and is not intended to link to end user devices. It is a link in the sense that it transports messages within, or native to, the CIF (i.e., GL and HES-AIL). The GL may also be referred to as the "HES-link"

[SOURCE: ISO/IEC 15045-2:2012, definition 3.1.10

3.1.90 General Event Notification Architecture (GENA)

3.1.90.1
GENA
General Event Notification Architecture. The event subscription and notification protocol defined in clause 4 (in ISO/IEC 29341-1).

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

3.1.91 Generic Interworking Function (GIWF)

3.1.91.1
generic interworking function
GIWF
translation function between a specific home network application language and the HES-AIL (Abstract Intermediate Language) used within the HES-gateway system

[SOURCE: ISO/IEC 15045-2:2012, definition 3.1.11]

3.1.92 Group address

3.1.92.1
group address
GA
2-octet value

Note 1 to entry: Figure 2 shows the group address, consisting of main group and subgroup address.

Group address															
Octet 0								Octet 1							
7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Main group								Sub-group							

Figure 2 – Group address

[SOURCE: ISO/IEC 14543-3-2:2006, definition 3.1.6]

3.1.93 Group Address Table (GrAT)

3.1.93.1
Group Address Table
GrAT
shared resource of both the Link Layer and the group-oriented Transport Layer; used by the Link Layer as a look-up reference to check whether it should pass a received frame to the upper layers or not and used by the group-oriented Transport Layer to map an incoming LSAP (Group Address) to a TSAP in receiving direction and vice versa in sending direction

[SOURCE: ISO/IEC 14543-3-4:2007, definition 3.1.10]

3.1.94 Group object association table

3.1.94.1
group object association table
resource of the Application Layer that stores the relationship between Transport Layer Service Access Points (TSAPs) and Application Layer Service Access Points (ASAP), as needed when mapping the Multicast Communication Mode messages A_GroupValue_Read and A_GroupValue_Write to T_Data_Group messages and vice versa

Note 1 to entry: The TSAP is an index in the Group Address Table. The ASAP is the Group Object number. The lowest ASAP is 0.

Note 2 to entry: The ASAP is a unique identifier for a group object to the Application Layer. Please also refer to the Application Layer specifications in ISO/IEC 14543-3-1. The ASAP is thus a group object number.

[SOURCE: ISO/IEC 14543-3-4:2007, definition 3.1.11]

3.1.95 Hamming distance

3.1.95.1
hamming distance
numbers of bits in which two binary codes differ

[SOURCE: ISO/IEC 14762:2009, definition 3.1.6]

3.1.96 HAN to gateway interface (HGI)

3.1.96.1
HAN to gateway interface
HGI
translates the communications protocol of HAN nodes to that of the internal processor within the RG

Note 1 to entry: The specification of the RG internal processor is outside the scope of standard (ISO/IEC 15045-1). The HGI may be implemented in software, firmware or hardware and may be modular or integrated in the RG.

[SOURCE: ISO/IEC 15045-1:2004, definition 3.1.5]

3.1.97 Hardware address

3.1.97.1
hardware address
address defined based on a medium-specific addressing scheme, such as an ISO/IEC 8802-3 address; this is a unique value for a node among the same kind of transmission medium

[SOURCE: ISO/IEC 14543-4-2:2008, definition 3.1.16]

3.1.97.2
hardware address
address defined based on a medium-specific addressing scheme, like IEE802[1] address; this is a unique value for a node among the same kind of the transmission medium

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.19]

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1 "IEE802" should read "IEEE 802": *IEEE Standard for Information technology – Telecommunications and information exchange between systems*

3.1.98 Harm

3.1.98.1
harm
physical injury or damage to the health of people either directly or indirectly as a result of damage to property or to the environment

[SOURCE: ISO/IEC 14762:2009, definition 3.1.7]

3.1.99 Hazard

3.1.99.1
hazard
potential source of harm

[SOURCE: ISO/IEC Guide 51, definition 3.5]

Note 1 to entry: The term includes danger to persons arising within a short time scale (for example, fire and explosion) and also those that have a long-term effect on a person's health (for example, release of a toxic substance).

[SOURCE: IEC 61508-4:1998, definition 3.1.2]

[SOURCE: ISO/IEC 14762:2009, definition 3.1.8]

3.1.100 Hazardous event

3.1.100.1
hazardous event
situation which results in harm on normal operation or abnormal condition

Note 1 to entry: Definition of IEC 61508-4, 3.1.3 and 3.1.4; circumstance in which a person is exposed to hazard(s) which results in harm.

[SOURCE: ISO/IEC 14762:2009, definition 3.1.9]

3.1.101 HBES product

3.1.101.1
HBES product
devices such as hardware, firmware, their associated software and of configuration tools, intended to be used in an HBES

Note 1 to entry: HBES products when used in a home are often referred to as HES products.

[SOURCE: ISO/IEC 14762:2009, definition 3.1.11]

3.1.102 HES Abstract Intermediate Language (AIL)

3.1.102.1
HES abstract intermediate language
AIL
language for representing or expressing the messages of any HAN or WAN

Note 1 to entry: AIL is an intermediate HES-gateway-oriented application language that includes a syntactic structure and semantic definitions comprising a lexicon of terms including objects and methods (actions)

[SOURCE: ISO/IEC 15045-2:2012, definition 3.1.12]

3.1.103 HES-application

3.1.103.1
HES-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 3.2.11]

3.1.104 HES application object

3.1.104.1
HES application object
HES application object is an HES-object located within the HES device application process

3.1.104.2
HES application object
an HES application object is an HES-object located within the HES device application process

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.12]

3.1.105 HES class 1

3.1.105.1
HES class 1
HES with transport capabilities for telecontrol applications such as:

- Control,
- Monitoring,
- Measurement,
- Alarm,
- Low speed data transfer

Note 1 to entry: These capabilities are typically provided for by the single packet-mode low bandwidth channel and the digital transmission.

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.14]

3.1.106 HES Class 1 Twisted Pair Type 0

3.1.106.1
HES Class 1 Twisted Pair Type 0
Twisted Pair medium Twisted Pair Type 0 (TP0) is a physical layer specification for data and power transmission on a single twisted pair, allowing asynchronous character-oriented data transfer in a half duplex bi-directional communication mode, using a specifically unbalanced/unsymmetrical base-band signal coding with collision avoidance under SELV conditions

[SOURCE: ISO/IEC 14543-3-6:2007, definition 3.1.1]

3.1.107 HES Class 1 Twisted Pair Type 1

3.1.107.1
HES Class 1 Twisted Pair Type 1
Twisted Pair medium Twisted Pair Type 1 (TP1) is a physical layer specification for data and power transmission on a single twisted pair, allowing asynchronous character-oriented data transfer in a half duplex bi-directional communication mode, using a specifically balanced/symmetrical base-band signal coding with collision avoidance under SELV conditions

[SOURCE: ISO/IEC 14543-3-6:2007, definition 3.1.2]

3.1.108 HES class 2

3.1.108.1
HES class 2
HES with capabilities for switched voice or other information transfer with similar bandwidth

Note 1 to entry: These capabilities are typically provided for by a class 1 system, enhanced with multiple switched medium bandwidth channels and analogue or digital transmission or both. In principle, all class 2 capabilities may be supported by a single class 2 channel.

For practical reasons, however, HES class 2 may contain a separate channel or use a separate medium to support class 1 capabilities.

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.15]

3.1.109 HES class 3

3.1.109.1
HES class 3
HES with capabilities for switched high quality sound and video transfer and high speed data transfer

Note 1 to entry: These capabilities are typically provided for by a class 2 system enhanced with multiple switched medium bandwidth channels and analogue or digital transmission or both.

In principle all class 3 capabilities may be supported on a single class 3 channel. For practical reasons, however, HES class 3 may contain a separate channel or use a separate medium to support class 1 and class 2 capabilities.

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.16]

3.1.110 HES device application process

3.1.110.1
HES device application process
part of a device application process which is accessible through the HES communication network

Note 1 to entry: An HES device application process is built up with application objects.

Note 2 to entry: The functionality of the HES dev

3.1.110.2
HES device application process
the part of a device application process which is accessible through the HES communication network

Note 1 to entry: An HES device application process is built up with application objects.

Note 2 to entry: The functionality of the HES device application process is defined in this series of standards (ISO/IEC 14543) or in the appropriate product standards.

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.17]

3.1.110.3
HES device application process
that part of a device application process that is accessible through the HES communication network. An HES device application process is built up from application objects. The functionality of the HES device application process is defined in this series of standard or in appropriate product standards

[SOURCE: ISO/IEC TR 15044:2000, definition 2.20]

3.1.111 HES-gateway

3.1.111.1
HES-gateway
gateway conforming to ISO/IEC 15045-2

Note 1 to entry: The HES-gateway provides protocol and language translation services above layer seven in conformance with this standard (ISO/IEC 15045-2).

[SOURCE: ISO/IEC 15045-2:2012, definition 3.1.13]

3.1.111.2
HES gateway
specific gateway that provides protocol and language translation services above layer seven employing the ISO/IEC 18012 HES guidelines for product interoperability standard

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.17]

3.1.112 HES home network

3.1.112.1
HES home network
home network supporting and including Universal Interfaces

[SOURCE: ISO/IEC TR 15044:2000, definition 2.21]

3.1.113 HES lexicon

3.1.113.1
HES lexicon
list of known HES application objects and structured information about them

Note 1 to entry: Lexicon in linguistics is an inventory of words and information about them. The term lexicon here is used to represent listing of known HES application objects and structured information about them. This part of the standard provides the structure to be used for the full compilation of the lexicon.

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.24]

3.1.114 HES-link module

3.1.114.1
HES-link module
device that provides the required services for one of the networks of the HES-gateway system

Note 1 to entry: In the context of this standard, the HES-link module provides protocol and language translation services above layer seven and provides an interface to the GL for purposes of connecting by the GL to one or more other HES-link modules serving other networks. Two or more HES-link modules, connected together via a GL, comprise a gateway

[SOURCE: ISO/IEC 15045-2:2012, definition 3.1.14]

3.1.115 HES-object

3.1.115.1
HES-object
set of data with associated functions applicable to it

Note 1 to entry: An HES-object can be implemented in various ways.

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.18]

3.1.116 HES user process

3.1.116.1
HES user process
part of the HES device application process belonging to the user domain of the HES

3.1.116.2
HES user process
the part of the HES device application process belonging to the user domain of the HES

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.19]

3.1.117 Home and building electronic systems (HBES)

3.1.117.1
home and building electronic systems
HBES
multi-application bus system where the functions are decentrally distributed and linked through a common communication process

Note 1 to entry: HBES is used in homes and buildings including their surroundings. Functions of the system are for example switching, open loop controlling, closed loop controlling, monitoring and supervising.

Note 2 to entry: When an HBES is used in a home, it is often referred to as HES (home electronic system).

[SOURCE: ISO/IEC 14762:2009, definition 3.1.10]

3.1.118 Home area network (HAN)

3.1.118.1
home area network
HAN
network specifically serving nodes, devices, components and functions within a home or premises

[SOURCE: ISO/IEC 15045-2:2012, definition 3.1.15]

3.1.118.2
home area network
HAN
any electronic network situated within the general environment of a residential dwelling and that connects enabled nodes within that dwelling

[SOURCE: ISO/IEC 15045-1:2004, definition 3.1.4]

3.1.119 Home control system

3.1.119.1
home control system
home network together with all the devices attached to it, including the rules for control, communication and management among application processes. Three classes of home control systems are defined.

[SOURCE: ISO/IEC TR 15044:2000, definition 2.22]

3.1.120 Home control system class 1

3.1.120.1
home control system class 1
home control system with transport capabilities for telecontrol applications such as:

- control
- monitoring
- measurement
- alarm
- low speed data transfer

Note 1 to entry: These capabilities are typically provided by:

- single packet-mode low bandwidth channel
- digital transmission

[SOURCE: ISO/IEC TR 15044:2000, definition 2.23]

3.1.121 Home control system class 2

3.1.121.1
Home control system class 2
Home control system with class 1 transport capabilities plus:

– switched voice or other information transfer of similar bandwidth

Note 1 to entry: These capabilities are typically provided by a class 1 system enhanced with:

– multiple switched medium bandwidth channels

– analogue or digital transmission or both

In principle all class 2 capabilities can be supported on a single class 2 channel. For practical reasons however, class 2 home control systems may contain a separate channel or use a separate medium to support class 1 capabilities.

[SOURCE: ISO/IEC TR 15044:2000, definition 2.24]

3.1.122 Home control system class 3

3.1.122.1
home control system class 3
home control system with class 2 transport capabilities plus:

– switched high quality sound and video transfer and high speed data transfer

Note 1 to entry: These capabilities are typically provided by a class 2 system enhanced with:

– multiple switched high bandwidth channels

– analogue or digital transmission or both

In principle all class 3 capabilities can be supported on a single class 3 channel. For practical reasons however, class 3 home control systems may contain separate channels or use separate media to support class 1 and 2 capabilities.

[SOURCE: ISO/IEC TR 15044:2000, definition 2.25]

3.1.123 Home electronic system (HES)

3.1.123.1
home electronic system
HES
collection of devices and components operating within the home and interconnected over one or more networks, and within which such devices and networks are compatible and interoperable according to various ISO/IEC standards

[SOURCE: ISO/IEC 15045-2:2012, definition 3.1.16]

3.1.123.2
home electronic system
HES
various electronic devices are used in homes, buildings and similar environments (including their immediate surroundings) for several applications relevant to the home and/or building

Note 1 to entry: The expression “Home Electronic System” (HES) covers any combination of electronic devices linked via a digital transmission network. The HES includes a specification for this communication network. There are three classes of HES, depending on the transmission throughput capabilities.

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.20]

3.1.123.3
Home Electronic System
HES
a home control system that conforms to the HES standards. There are three classes of HESs corresponding to the classes of home control systems

[SOURCE: ISO/IEC TR 15044:2000, definition 2.26]

3.1.124 Home network

3.1.124.1
home network
internal network for digital and analogue information transport in a home or on business premises of similar complexity, providing defined access points and using one or more media in any topology

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.21]

3.1.124.2
home network
internal network for digital and analogue information transport in a home or business premises of similar complexity, providing defined access points and using any medium in any topology

[SOURCE: ISO/IEC TR 15044:2000, definition 2.27]

3.1.125 IGRS client

3.1.125.1
IGRS client
application that draws upon the services of one or more connected IGRS devices

Note 1 to entry: Multiple client instances can exist on a network at the same time.

[SOURCE: ISO/IEC 14543-5-1:2010, definition 3.1.6; ISO/IEC 14543-5-4:2010, definition 3.7]

3.1.126 IGRS device

3.1.126.1
IGRS device
information device that conforms to ISO/IEC 14543-5-1

[SOURCE: ISO/IEC 14543-5-4:2010, definition 3.8]

3.1.126.2
IGRS device
information device that conforms to the IGRS specification

[SOURCE: ISO/IEC 14543-5-1:2010, definition 3.1.7]

3.1.127 IGRS protocol

3.1.127.1
IGRS protocol
communications protocol that conforms to ISO/IEC 14543-5-1

[SOURCE: ISO/IEC 14543-5-4:2010, definition 3.9]

3.1.128 IGRS service

3.1.128.1
IGRS service
sharable resource encapsulated in an IGRS device by implementing application interfaces and providing services for other IGRS devices

Note 1 to entry: An IGRS service has an invocation interface that meets the requirements of ISO/IEC 14543-5-1. These invocation interfaces are described and announced on the network through the IGRS service description specification.

[SOURCE: ISO/IEC 14543-5-4:2010, definition 3.10]

3.1.128.2
IGRS service
sharable resource encapsulated in an IGRS Device by implementing application interfaces and providing services for other IGRS Devices

Note 1 to entry: An IGRS Service has an invocation interface that meets the requirements of the IGRS specification. These invocation interfaces are described and announced on the network through the IGRS Service Description Specification.

[SOURCE: ISO/IEC 14543-5-1:2010, definition 3.1.8]

3.1.129 IGRS specification

3.1.129.1
IGRS specification
ISO/IEC 14543-5 series of standards

[SOURCE: ISO/IEC 14543-5-1:2010, definition 3.1.9]

3.1.130 IGRS user

3.1.130.1
IGRS user
owner of an IGRS Device and Client

[SOURCE: ISO/IEC 14543-5-1:2010, definition 3.1.10; ISO/IEC 14543-5-4:2010, definition 3.11]

3.1.131 Individual address

3.1.131.1
individual address
IA
unique identifier for every device in a network

Note 1 to entry: The individual address is a 2-octet value that consists of an 8-bit subnetwork address and an 8-bit device address.

[SOURCE: ISO/IEC 14543-3-2:2006, definition 3.1.1]

3.1.132 Information channel

3.1.132.1
information channel
communication channel established between two or more entities for the primary purpose of exchange of information other than HES control and monitoring messages

Note 1 to entry: Examples of such information are audio or video data, facsimile data and analogue speech signals.

3.1.132.2
information channel
a communication channel established between two or more entities for the primary purpose of exchange of information other than HES control and monitoring messages

Note 1 to entry: Examples of such information are audio or video data, facsimile data and analogue speech signals.

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.22]

3.1.132.3
information channel
a communication channel that is established between two or more entities for the primary purpose of exchange of information other than HES control and monitoring messages. Examples of such information are audio or video data, FAX data and analogue or digital speech signals

[SOURCE: ISO/IEC TR 15044:2000, definition 2.28]

3.1.133 Intelligent home

3.1.133.1
intelligent home
home in which the integration of services and interworking of devices improve the residents' comfort, well-being, safety and communication possibilities

Note 1 to entry: The focus of the integration is on a unified user access to services and devices and the interworking capabilities between different application areas.

Note 2 to entry: Example application areas are home security, home entertainment, home automation, health care, telecommunication, energy management and personalized information (as traffic, weather,..).

[SOURCE: ISO/IEC TR 29107-1:2010, definition 2.1]

3.1.134 Interconnectivity

3.1.134.1
interconnectivity
ability of devices to be connected to a shared transmission medium by proper specification of mechanical, electrical and functional (lower layer protocol) characteristics

[SOURCE: ISO/IEC TR 15044:2000, definition 2.29]

3.1.135 Interface

3.1.135.1
interface
shared boundary between two implementations of functions belonging to one or more functional groupings

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.23; ISO/IEC TR 15044:2000, definition 2.30]

3.1.136 Intermediate implementation

3.1.136.1
intermediate implementation
mixed collection of two or more network implementations

Note 1 to entry: To establish connectivity, an intermediate implementation provides for a common intermediate translation between any two networks, assuring a worst-case translation path of two hops (from any network to the common translation, and then from the common translation to the destination network).

[SOURCE: ISO/IEC 18012-1:2004, definition 3.1.11]

3.1.137 Interoperability

3.1.137.1
interoperability
logical entities functioning together for applications on a network

[SOURCE: ISO/IEC 18012-1:2004, definition 3.1.5]

3.1.137.2
interoperability
the ability of devices to exchange information via the higher layers resulting in meaningful actions; this includes aspects of the application domain which, by definition, is beyond the OSI domain

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.24]

3.1.137.3
interoperability
ability of logical entities to function together for applications on a network

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.18]

3.1.137.4
interoperability
ability of two or more distributed components to communicate and cooperate in predictable ways despite differences in implementation language, execution environment, or model abstraction

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.19]

3.1.137.5
interoperability
ability of logical entities to function together for applications on a network or between multiple networks

[SOURCE: ISO/IEC 15045-2:2012, definition 3.1.18]

3.1.137.6
Interoperability
ability of devices to exchange commands via the higher layers resulting in meaningful actions. This includes aspects of the application domain which by definition is beyond the OSI domain

[SOURCE: ISO/IEC TR 15044:2000, definition 2.31]

3.1.138 Interoperability domain (ID)

3.1.138.1
interoperability domain
ID
logical space where interoperable objects seamlessly interact with one-another using an event bus

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.19]

Note 1 to entry: The definition of the interoperability domain is not only the dictionary; it comprises the system that uses one single lexicon (dictionary) to translate to and from devices belonging to multiple systems.

3.1.139 Interoperability domain interface (IDI)

3.1.139.1
interoperability domain interface
IDI
software object that provides the translation between a generic interoperable application object instance and a corresponding network/system-specific counterpart

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.21]

3.1.140 Interworking

3.1.140.1
interworking
ability of two or more devices to support exchange of data and actions between them, having the same communication interface and application data types

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.22]

3.1.141 Interworking function

3.1.141.1
interworking function
IWF
software module that provides syntactic and semantic translation services between a network/system device and its standardised interoperable representation (i.e., its interoperable application object)

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.23]

3.1.142 IPSec

3.1.142.1
IPSec
provides security services at the IP layer that allow the user to apply combinations of integrity, replay detection and encryption to IP packets

It also provides a mechanism for users to authenticate each other and generate and exchange session keys, secret keys that are used for a limited time (a session), and then discarded

Note 1 to entry: For further explanation, see IETF.

[SOURCE: ISO/IEC 15045-1:2004, definition 3.1.6]

3.1.143 Isolating functions

3.1.143.1
isolating functions
functions providing safety isolation between a device and an NAU

[SOURCE: ISO/IEC TR 15044:2000, definition 2.32]

3.1.144 Key setting node

3.1.144.1
key setting node
entity responsible for key generation/distribution and management

[SOURCE: ISO/IEC 24767-2:2009, definition 3.1.4]

3.1.145 Line address

3.1.145.1
line address
part of the individual address that specifies the line in which the device is mounted

[SOURCE: ISO/IEC 14543-3-2:2006, definition 3.1.4]

3.1.146 Local application process

3.1.146.1
local application process
part of an application process within a device which is not accessible through the HES communication network, it is located inside the user domain

3.1.146.2
local application process
the part of an application process within a device which is not accessible through the HES communication network, it is located inside the user domain

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.25]

3.1.146.3
local application process
the part of an application process within a device that is not accessible through a communication network. It is located within the user domain and therefore may also be called the local user process

[SOURCE: ISO/IEC TR 15044:2000, definition 2.33]

3.1.147 Local area network (LAN)

3.1.147.1
local area network
LAN
any electronic network that connects computing devices together to form a group of intercommunicating devices

[SOURCE: ISO/IEC 15045-1:2004, definition 3.1.7]

3.1.148 Logical Tag Extended HEE

3.1.148.1
Logical Tag Extended HEE
usage of the L_Data_Extended frame dedicated to extended group addressing

[SOURCE: ISO/IEC 14543-3-6:2007, definition 3.1.4]

3.1.149 Line address

3.1.149.1
line address
part of the individual address that specifies the line in which the device is mounted

[SOURCE: ISO/IEC 14543-3-2:2006, definition 3.1.4]

3.1.150 MAC address

3.1.150.1
MAC address
media access control sub-layer of the data-link layer of the communications protocol used

[SOURCE: ISO/IEC 24767-2:2009, definition 3.1.5]

3.1.151 Management client

3.1.151.1
management client
powerful device with 'controller' function, typically but not exclusively PC-based

[SOURCE: ISO/IEC 14543-3-4:2007, definition 3.1.5]

3.1.152 Management Information Base (MIB)

3.1.152.1
Management Information Base
MIB
virtual database used for managing entities in a network

3.1.152.2
management information base
MIB
memory function in some portion of the gateway that stores information useful for various network management functions

Note 1 to entry: No relationship is implied here with Simple Network Management Protocol (SNMP) from which the term "MIB" is borrowed.

[SOURCE: ISO/IEC 15045-2:2012, definition 3.1.19]

3.1.152.3
management information base
Simple Network Management Protocol (SNMP)

Note 1 to entry: See also IETF.

[SOURCE: ISO/IEC 15045-1:2004, definition 3.1.8]

3.1.153 Management procedures

3.1.153.1
management procedures
dynamics of managing distributed resources on the network in terms of abstract procedures between two partners, the management client and the management server

3.1.153.2
management procedures
the dynamics of managing distributed resources on the network in terms of abstract procedures between two partners, the management client and the management server

[SOURCE: ISO/IEC 14543-3-4:2007, definition 3.1.4]

3.1.154 Management server

3.1.154.1
management server
particular device that acts as target device, except for network-oriented management, where the network as a whole acts as partner or server

3.1.154.2
management server
a particular device that acts as target device; except for network-oriented management, where the network as a whole acts as partner or server

[SOURCE: ISO/IEC 14543-3-4:2007, definition 3.1.6]

3.1.155 Medium attachment point

3.1.155.1
medium attachment point
physical connection point to a medium

[SOURCE: ISO/IEC TR 15044:2000, definition 2.34]

3.1.156 Medium Interface (MI)

3.1.156.1
Medium Interface
MI
interface placed at the medium attachment point, Reference Point A, which connects a device or an NAU directly to the transmission medium. Mechanical, electrical, functional and procedural characteristics are not provided in the HES standards

[SOURCE: ISO/IEC TR 15044:2000, definition 2.35]

3.1.157 Message frame

3.1.157.1
message frame
minimum data unit transmitted between a home appliance node and a home appliance control

[SOURCE: ISO/IEC 24767-2:2009, definition 3.1.6]

3.1.158 Multiple implementation

3.1.158.1
multiple implementation
mixed collection of two or more network implementations

Note 1 to entry: To establish interoperability, each network has a routing path to every other network in the system. This path may involve one or more hops through multiple intermediate networks.

[SOURCE: ISO/IEC 18012-1:2004, definition 3.1.10; ISO/IEC 18012-2:2012, definition 3.1.25]

3.1.159 NetID

3.1.159.1
NetID
SUBNET identifier that is also a component of a data link address

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.20; ISO/IEC 14543-4-2:2008, definition 3.1.17]

3.1.160 Network

3.1.160.1
network
distinct interconnection of devices that share a single physical layer implementation in terms of the OSI layered network model

Note 1 to entry: See ISO/IEC 7498-1:1994.

[SOURCE: ISO/IEC 18012-1:2004, definition 3.1.6; ISO/IEC 18012-2:2012, definition 3.1.26]

3.1.160.2
network
distinct interconnection or set of nodes or devices that share a common communication protocol and are mutually compatible and interoperable

[SOURCE: ISO/IEC 15045-2:2012, definition 3.1.20]

3.1.160.3
network
combination of several transmission links connected at individual points by electrical or optical means as part of an installation, system, appliance or component

[SOURCE: ISO/IEC 14543-3-4:2007, definition 3.1.1]

3.1.161 Network access point

3.1.161.1
network access point
connection point giving access to a home network

[SOURCE: ISO/IEC TR 15044:2000, definition 2.36]

3.1.162 Network access unit (NAU)

3.1.162.1
network access unit
NAU
piece of equipment which comprises the mechanical, electrical and communicational functions for an HES connection

Note 1 to entry: The NAU corresponds to one network service access point (NSAP) and can be uniquely identified by one or more network addresses.

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.26]

3.1.162.2
network access unit
NAU
physical implementation of functions belonging to one or more functional groupings providing access to a home network and its transmission medium including the necessary functions for the particular implementation, for example contention control. It has one NSAP, and can be uniquely identified by one or more network addresses

[SOURCE: ISO/IEC TR 15044:2000, definition 2.37]

3.1.163 Network address translation (NAT)

3.1.163.1
network address translation
NAT
feature defined for the internet whereby one IP address is assigned to an RG

Messages intended for specific nodes on a home network are sent to that address and mapped by the NAT to specific node addresses and vice versa

Note 1 to entry: See also IETF.

[SOURCE: ISO/IEC 15045-1:2004, definition 3.1.9]

3.1.164 Network management

3.1.164.1
network management
device-independent management procedures on the network as for example reading/writing the individual address and scanning the network. For these procedures no knowledge of the single devices is required

[SOURCE: ISO/IEC 14543-3-4:2007, definition 3.1.7]

3.1.165 Network powered device (NPD)

3.1.165.1
network powered device
NPD
device that derives its power from the network

[SOURCE: ISO/IEC TR 15044:2000, definition 2.38]

3.1.166 Network segment

3.1.166.1
network segment
part of an HES network that is within the domain of a single link layer instance

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.27]

3.1.166.2
network segment
part of a network that is within the domain of a single link layer

[SOURCE: ISO/IEC TR 15044:2000, definition 2.39]

3.1.167 Node

3.1.167.1
node
communication node conforming to ISO/IEC 14543-4

Note 1 to entry: In ISO/IEC 14543-4, this is a communications function to be uniquely identified by a data link address. There is no distinction between the application functions of nodes. The term node is used to describe the function of one communication terminal.

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.21; ISO/IEC 14543-4-2:2008, definition 3.1.18]

3.1.168 Node address

3.1.168.1
node address
address to implement layer-2 communication in transmission media

Note 1 to entry: In ISO/IEC 14543-4, this does not signify an Ethernet MAC[2] address.

[SOURCE: ISO/IEC 14543-4-2:2008, definition 3.1.19]

3.1.168.2
node address
address to implement layer-2 communication in transmission media

Note 1 to entry: In ISO/IEC 14543-4, this corresponds to the own hardware address.

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.22]

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2 Ethernet™ is the trade name of a product supplied by Xerox Corporation. This information is given for the convenience of users of this document and does not constitute an endorsement by ISO or IEC of the product named. Equivalent products may be used if they can be shown to lead to the same results. For technical specifications of the MAC address see ISO/IEC 8802-3.

3.1.169 NodeID

3.1.169.1
NodeID
identifier used to identify a node uniquely within the SUBNET

Note 1 to entry: This is a logical address converted from the node address native to the lower-layer communications software. This is also a component of data link address.

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.23; ISO/IEC 14543-4-2:2008, definition 3.1.20]

3.1.170 (N)-service access point ((N)-SAP)

3.1.170.1
(N)-service access point
(N)-SAP
point at which (N)-services are provided by an (N)-entitiy to an(N+1-entity

[SOURCE: ISO/IEC 7498-1, 5.2.1.8]

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.1.9]

3.1.171 (N)-service-data-unit ((N)-SDU)

3.1.171.1
(N)-service-data-unit
(N)-SDU
amount of information whose identity is preserved when transferred between peer-(N+1)-entities and which is not interpreted by the supporting (N)-entities

[SOURCE: ISO/IEC 7498-1, 5.6.1.4]

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.1.5]

3.1.172 Object

3.1.172.1
object
program or unit of software functionality

Note 1 to entry: This definition is similar to that traditionally used in object-oriented programmig.

[SOURCE: ISO/IEC 15045-2:2012, definition 3.1.21, SOURCE: ISO/IEC 18012-2:2012, definition 3.1.27]

3.1.172.2
object
set of data with associated functions applicable to it. An HES-object can be implemented in various ways

[SOURCE: ISO/IEC TR 15044:2000, definition 2.40]

3.1.172.3
object
program or unit of software functionality

Note 1 to entry: This definition is similar to that traditionally used in object-oriented programming.

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.27]

3.1.172.4
object
unit of software functionality

Note 1 to entry: This definition is similar to that traditionally used in object-oriented programming.

[SOURCE: ISO/IEC 18012-1:2004, definition 3.1.7]

3.1.173 Object binding map

3.1.173.1
object binding map
information structure associated with multiple application objects that defines connections from event outputs in the application objects

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.28]

3.1.174 Off state

3.1.174.1
off state
state in which an SI device is not performing its intrinsic function

[SOURCE: ISO/IEC TR 15044:2000, definition 2.41]

3.1.175 On state

3.1.175.1
on state
state in which an SI device is performing its intrinsic function

[SOURCE: ISO/IEC TR 15044:2000, definition 2.42]

3.1.176 OSI environment (OSIE)

3.1.176.1
OSI environment
OSIE
abstract representation of the set of concepts, elements, functions, services, protocols, etc., as defined by the OSI reference model and the derived specific standards which, when applied, enable communications among open systems

[SOURCE: ISO/IEC 7498-1, 4.1.5]

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.1.7]

3.1.177 Out of band

3.1.177.1
out of band
use of other mechanisms than the ones required on a communications channel to transmit information

[SOURCE: ISO/IEC 24767-2:2009, definition 3.1.7]

3.1.178 Packet-switched transmission

3.1.178.1
packet-switched transmission
transmission that uses communication bandwidth in bursts. An entity transmitting data using packet-switched transmission organizes the data in discrete "packets". Typically, two or more entities using packet-switched transmission share a communication channel. A protocol is required to resolve contention between transmitting entities to allow the orderly interleaving of packets from different entities

[SOURCE: ISO/IEC TR 15044:2000, definition 2.43]

3.1.179 Peer-to-peer device group

3.1.179.1
peer-to-peer device group
set of IGRS devices where each IGRS device in this set has a peer-to-peer relationship with each other

[SOURCE: ISO/IEC 14543-5-1:2010, definition 3.1.11; ISO/IEC 14543-5-4:2010, definition 3.12]

3.1.180 PEI type

3.1.180.1
PEI type
physical and logical identifier of the configuration of the PEI to enable hardware compatibility recognition

[SOURCE: ISO/IEC 14543-3-4:2007, definition 3.1.14]

3.1.181 Personal area network

3.1.181.1
personal area network
any electronic network that connects to enabled devices within the immediate vicinity of a person, generally within a 10 m radius including devices carried by that person

[SOURCE: ISO/IEC 15045-1:2004, definition 3.1.10]

3.1.182 Physical External Interface (PEI)

3.1.182.1
physical external interface
PEI
physical and electrical interface situated in a device between the bus access unit and any hardware performing an application function

[SOURCE: ISO/IEC 14543-3-4:2007, definition 3.1.13]

3.1.183 PL 110

3.1.183.1
PL110
powerline signalling operating in a frequency band of 95 kHz to 125 kHz according to EN 50065-1

[SOURCE: ISO/IEC 14543-3-5:2007, definition 3.1.3]

3.1.184 PL 132

3.1.184.1
PL132
powerline signalling operating in a frequency band of 125 kHz to 140 kHz according to EN 50065-1

[SOURCE: ISO/IEC 14543-3-5:2007, definition 3.1.4]

3.1.185 Plug compatibility

3.1.185.1
plug compatibility
combined capability of interoperability and interconnection. It usually implies that a particular interface is claimed for a particular purpose to the extent that showing a certain interface implies interworking capabilities

3.1.185.2
plug compatibility
the combined capability of interoperability and interconnection. It usually implies that a particular interface is claimed for a particular purpose to the extent that showing a certain interface implies interworking capabilities

[SOURCE: ISO/IEC TR 15044:2000, definition 2.44]

3.1.186 Processing and protocol conversion

3.1.186.1
processing and protocol conversion
for any WGI or HGI, processing and protocol conversion may take place to present data in the format and protocol of the RG

[SOURCE: ISO/IEC 15045-1:2004, definition 3.1.11]

3.1.187 Process interface

3.1.187.1
process interface
any interface between devices and the network, placed above layer 7 in the OSI reference model, in a home control system

Note 1 to entry: Examples of process interfaces are: one bit interfaces, parallel interfaces, and analogue interfaces.

[SOURCE: ISO/IEC TR 15044:2000, definition 2.45]

3.1.188 Process interface adaptation

3.1.188.1
process interface adaptation
process of adapting a device or an NAU to a process interface

[SOURCE: ISO/IEC TR 15044:2000, definition 2.46]

3.1.189 Product

3.1.189.1
product
devices such as hardware, firmware, their associated software and configuration tools

[SOURCE: ISO/IEC 14762:2009, definition 3.1.12]

3.1.189.2
product
device or network of devices that may be purchased to make up a home electronic system

[SOURCE: ISO/IEC 15045-2:2012, definition 3.1.22]

3.1.189.3
product
device or network that may be purchased to constitute a Home Electronic System

[SOURCE: ISO/IEC 18012-1:2004, definition 3.1.8]

3.1.189.4
product
device or network that may be purchased to make up a Home Electronic System (HES)

[SOURCE: ISO/IEC 18012-2:2012, definition 3.1.30]

3.1.190 Product documentation

3.1.190.1
product documentation
manufacturer's installation and operations' literature which accompanies the product;

the product information contained in the manufacturer's catalogue and other product marketing material-information;

the description, definitions, product literature and usage as presented in electronic format on the manufacturer's (or supplier's) website on the World Wide Web/Internet

[SOURCE: ISO/IEC 14762:2009, definition 3.1.13]

3.1.191 Protocol difference absorption processing block

3.1.191.1
protocol difference absorption processing block
one processing block of the communications middleware

Note 1 to entry: This block is intended to absorb differences of multiple protocols, including power lines and low-power wireless, to configure a single network. The block performs address translation, communication type conversion, data division and data assembly.

[SOURCE: ISO/IEC 14543-4-2:2008, definition 3.1.21]

3.1.192 Publisher

3.1.192.1
publisher
Source of event messages. Typically a device's service. For more information, see clause on Eventing (in ISO/IEC 29341-1).

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

3.1.193 Reasonably foreseeable misuse

3.1.193.1
reasonably foreseeable misuse
use of a product, process or service under conditions or for purposes not intended by the supplier, but which may happen, induced by the product, process or service in combination with, or as result of, common human behaviour

[SOURCE: IEC 61508-4:1998, definition 3.1.11]

[SOURCE: ISO/IEC 14762:2009, definition 3.1.16]

3.1.194 Reference model

3.1.194.1
reference model
model that describes the general principles of interconnections in a system and the network architecture resulting from those principles

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.28; ISO/IEC TR 15044:2000, definition 2.47]

3.1.195 Remote Powered Devices

3.1.195.1
Remote Powered Devices
remote Powered Bus Devices (RPD) do not extract their energy for the application circuit and the bus controller from the bus but from another independent source of energy, e.g. mains. Owing to the reduced DC power consumption of RPD, a bus line equipped with such devices requires less power from the installed Power Supply Unit (PSU). The connection of bus-controller and application to the same electrical potential reduces the effort of galvanic separation in RPD

[SOURCE: ISO/IEC 14543-3-6:2007, definition 3.1.5]

3.1.196 Repeater

3.1.196.1
repeater
unit that regenerates or amplifies signals in order to extend the range of transmission between medium attachment points or to interconnect two network segments that use the same protocols

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.29]

3.1.196.2
repeater
unit that amplifies and regenerates signals to extend the range of transmissions between medium attachment points or to interconnect two network segments that use the same protocols

[SOURCE: ISO/IEC TR 15044:2000, definition 2.48]

3.1.197 Requested service

3.1.197.1
requested service
networked node that responds to service requests

[SOURCE: ISO/IEC 24767-2:2009, definition 3.1.8]

3.1.198 Residential gateway

3.1.198.1
residential gateway
electronic device that is situated between WANs and HANs (or LANs) in the premises

[SOURCE: ISO/IEC 15045-1:2004, definition 3.1.12]

3.1.199 Residential gateway internal processes

3.1.199.1
residential gateway internal processes
any RG will have internal processes (which are not defined in terms of software requirements) to carry out the requirements of an RG

[SOURCE: ISO/IEC 15045-1:2004, definition 3.1.13]

3.1.200 Risk

3.1.200.1
risk
combination of the probability of occurrence of harm and the severity of that harm

[SOURCE: ISO/IEC Guide 51:1999, definition 3.2, IEC 61508-4:1998, definition 3.1.5]

[SOURCE: ISO/IEC 14762:2009, definition 3.1.15]

3.1.201 Root device

3.1.201.1
root device
A logical device that is not embedded in any other logical device. For more information, see clause on Description (in ISO/IEC 29341-1).

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

3.1.202 Route

3.1.202.1
route
directs information, command or data stream to a particular address or node in the WAN, LAN or HAN

3.1.202.2
route
to route information is to direct the information, command or data stream to a particular address or node in the WAN, LAN or HAN

[SOURCE: ISO/IEC 15045-1:2004, definition 3.1.14]

3.1.203 Router

3.1.203.1
router
forwards data packets based on address information therein from one network to its target in another network or to another router towards its target network

3.1.203.2
router
connects one sub-network with another sub-network

[SOURCE: ISO/IEC 14543-3-5:2007, definition 3.1.2]

3.1.203.3
router
interface between dissimilar middle layer networks

Note 1 to entry: A router may provide services at layer 2 (data link layer) or layer 3 (network layer)

[SOURCE: ISO/IEC 15045-2:2012, definition 3.1.23]

3.1.204 SA data

3.1.204.1
SA data
node address of the source of messages between lower-layer communications software

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.24; ISO/IEC 14543-4-2:2008, definition 3.1.22]

3.1.205 Safety function

3.1.205.1
safety function
function to be implemented by an E/E/PE safety related system, other technology safety-related systems or external risk reduction facilities, which is intended to achieve and maintain a safe state for the EUC, in respect of a specific hazardous event (see IEC 61508-4, definition 3.1.4)

[SOURCE: IEC 61508-4, definition 3.5.1]

[SOURCE: ISO/IEC 14762:2009, definition 3.1.17]

3.1.206 Safety related system

3.1.206.1
safety related system
designated system that both implements the required safety functions necessary to achieve or maintain a safe state for the EUC and is intended to achieve on its own or with other E/E/PE safety related systems, other technology safety-related systems or external risk reduction facilities, the necessary safety integrity for the required safety functions

Note 1 to entry: The term refers to those systems, designated as safety-related systems, that are intended to achieve, together with the external risk reduction facilities (see IEC 61508-4, definition 3.4.3), the necessary risk reduction in order to meet the required tolerable risk (see IEC 61508-4, definition 3.1.6). See also Annex A of IEC 61508-5.

Note 2 to entry: The safety-related systems are designed to prevent the EUC from going into a dangerous state by taking appropriate action on receipt of commands. The failure of a safety-related system would be included in the events leading to the determined hazard or hazards. Although there may be other systems having safety functions it is the safety-related systems that have been designated to achieve, in their own right, the required tolerable risk. Safety-related systems can broadly be divided into safety-related control systems and safety-related protection systems, and have two modes of operation (IEC 61508-4, definition 3.5.12).

Note 3 to entry: Safety-related systems may be an integral part of the EUC control system or may interface with the EUC by sensors and/or actuators. That is, the required safety integrity level may be achieved by implementing the safety functions in the EUC control system (and possibly by additional separate and independent systems as well) or the safety functions may be implemented by separate and independent systems dedicated to safety.

Note 4 to entry: A safety-related system may

a) be designed to prevent the hazardous event (i.e. if the safety-related systems perform their safety functions then no hazardous event arises),

b) be designed to mitigate the effects of the hazardous event, thereby reducing the risk by reducing the consequences,

c) be designed to achieve a combination of a) and b).

Note 5 to entry: A person can be part of a safety-related system (IEC 61508-4, definition 3.3.1). For example, a person could receive information from a programmable electronic device and perform a safety action based on this information or perform a safety action through a programmable electronic device.

Note 6 to entry: The term includes all the hardware, software and supporting services (for example, power supplies) necessary to carry out the specified safety function (sensors, other input devices, final elements (actuators) and other output devices are therefore included in the safety-related system).

Note 7 to entry: A safety-related system may be based on a wide range of technologies including electrical, electronic, programmable electronic, hydraulic and pneumatic technologies.

[SOURCE: IEC 61508-4, definition 3.4.1]

[SOURCE: ISO/IEC 14762:2009, definition 3.1.14]

3.1.207 Secure/multi purpose internet mail extensions

3.1.207.1
secure/multi purpose internet mail extensions
secure encoding for e-mail attachments

Note 1 to entry: See also IETF.

[SOURCE: ISO/IEC 15045-1:2004, definition 3.1.16]

3.1.208 Secure sockets layer/transport layer security (SSL/TLS)

3.1.208.1
secure sockets layer/transport layer security
SSL/TSL
secure sockets layer protocol implements security on HTTP-based communications[3]

3.1.208.2
Secure sockets layer/transport layer security
SSL
the *Secure Sockets Layer* protocol implements security on HTTP-based communications

[SOURCE: ISO/IEC 15045-1:2004, definition 3.1.17]

3.1.209 Segmentation

3.1.209.1
segmentation
function performed by an (N)-entity to map one (N)-SDU into multiple (N)-DPUs. It is the reverse function to reassembling

[SOURCE: ISO/IEC TR 15044:2000, definition 2.49]

3.1.210 Segmenting

3.1.210.1
segmenting
function performed by an (N)-entity to map multiple (N)-service-data-unit into multiple (N)-protocol-data-units

[SOURCE: ISO/IEC 7498-1, 5.8.1.9]

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.1.8]

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3 The IETF formed the TLS Working Group to develop a common standard. Version 1 of TLS, the Transport Layer Security protocol [N10], was issued in January 1999. See IETF.

3.1.211 Self powered device (SPD)

3.1.211.1
self powered device
SPD
device which derives its power from other sources than the network

[SOURCE: ISO/IEC TR 15044:2000, definition 2.50]

3.1.212 Service

3.1.212.1
service
Logical functional unit. Smallest units of control. Exposes actions and models the state of a physical device with state variables. For more information, see clause on Control (in ISO/IEC 29341-1)

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

3.1.213 Service description

3.1.213.1
service description
Formal definition of a logical service, expressed in the UPnP Template language. Written in XML syntax. Specified by a UPnP vendor by filling in any placeholders in a UPnP Service Template. (Was SCPD.) For more information, see clause on Description (in ISO/IEC 29341-1)

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

3.1.214 Service identifier

3.1.214.1
service identifier
unique identifier assigned to a service provided by a specific IGRS device

Note 1 to entry: The same type of service may be provided by multiple IGRS devices within the same network. Each instance of a service has a unique service identifier on the IGRS device providing that service.

[SOURCE: ISO/IEC 14543-5-4:2010, definition 3.13]

3.1.214.2
service identifier
unique identifier assigned to a service provided by a specific IGRS Device

Note 1 to entry: Note that the same type of service may be provided by multiple IGRS Devices within the same network. Each instance of a service has a unique service identifier on the IGRS Device providing that service.

[SOURCE: ISO/IEC 14543-5-1:2010, definition 3.1.12]

3.1.215 Service requester

3.1.215.1
service requester
networked node that issues service requests

[SOURCE: ISO/IEC 24767-2:2009, definition 3.1.9]

3.1.216 Service type

3.1.216.1
service type
Standard service types are denoted by urn:schemas-upnp-org:service: followed by a unique name assigned by a UPnP forum working committee, colon, and an integer version number. One-to-one relationship with UPnP Service Templates. UPnP vendors may specify additional services; these are denoted by urn:*domain-name*:service: followed by a unique name assigned by the vendor, colon, and a version number, where *domain-name* is a domain name registered to the vendor. For more information, see clause on Description (in ISO/IEC 29341-1).

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

3.1.216.2
service type
category of IGRS Service defined according to the set of resources encapsulated

Note 1 to entry: The Service Type enables service applications in the same category to have common invocation interfaces.

[SOURCE: ISO/IEC 14543-5-1:2010, definition 3.1.13; ISO/IEC 14543-5-4:2010, definition 3.14]

3.1.217 SI adaption

3.1.217.1
SI adaption
process of adapting a device or an NAU to the SI

[SOURCE: ISO/IEC TR 15044:2000, definition 2.51]

3.1.218 SI-cable

3.1.218.1
SI-cable
cable connecting an SI device to an SI NAU

Note 1 to entry: The SI connector on the NAU is normally mounted in the wall.

Note 2 to entry: On the NAU end the SI cable has a connector; on the device end it could have a connector or be permanently attached to the device.

[SOURCE: ISO/IEC TR 15044:2000, definition 2.62]

3.1.219 SI cable connector

3.1.219.1
SI cable connector
standardized connector on an SI cable for connecting an SI device to an SI NAU

Note 1 to entry: The device end of the cable may have a connector or be permanently attached to the device.

[SOURCE: ISO/IEC TR 15044:2000, definition 2.52]

3.1.220 SI conductor

3.1.220.1
SI conductor
conductor connecting an SI NAU and an SI device

[SOURCE: ISO/IEC TR 15044:2000, definition 2.63]

3.1.221 SI connection

3.1.221.1
SI connection
connection point between an SI cable (where applicable) and an SI device

[SOURCE: ISO/IEC TR 15044:2000, definition 2.53]

3.1.222 SI connector

3.1.222.1
SI connector
connector on an SI NAU for connecting an SI device to an SI NAU

Note 1 to entry: The SI connector is normally mounted in the wall.

[SOURCE: ISO/IEC TR 15044:2000, definition 2.54]

3.1.223 SI control signal

3.1.223.1
SI control signal
signal transmitted via an SI NAU to an SI device to set the state of the device

[SOURCE: ISO/IEC TR 15044:2000, definition 2.55]

3.1.224 SI device

3.1.224.1
SI device
device supporting and offering the SI

Note 1 to entry: If the context makes it clear that a device is an SI device, SI will normally be omitted from the term.

[SOURCE: ISO/IEC TR 15044:2000, definition 2.56]

3.1.225 SI device connector

3.1.225.1
SI device connector
optional connector on an SI device for connection of an SI cable. The cable may instead be permanently attached to the device

[SOURCE: ISO/IEC TR 15044:2000, definition 2.57]

3.1.226 SI dynamic monitor signal

3.1.226.1
SI dynamic monitor signal
one of two forms of the SI monitor signal, characterized by continuously switching between high and low signal levels for the on state

[SOURCE: ISO/IEC TR 15044:2000, definition 2.58]

3.1.227 SI monitor signal

3.1.227.1
SI monitor signal
signal indicating the state of an SI device transmitted from the device to the SI NAU

[SOURCE: ISO/IEC TR 15044:2000, definition 2.59]

3.1.228 Simple Interface (SI)

3.1.228.1
simple interface
SI
process interface, to be used for and by simple devices such as actuators and sensors, within a HES. The SI offers only one/zero commands and accepts only one/zero data entries. The specification of the SI includes the necessary mechanical, electrical, functional and procedural characteristics of the interface

[SOURCE: ISO/IEC TR 15044:2000, definition 2.64]

3.1.229 Simple Object Access Protocol (SOAP)

3.1.229.1
SOAP
Simple Object Access Protocol. A remote-procedure call mechanism based on XML that sends commands and receives values over HTTP. For more information, see clause on Control (in ISO/IEC 29341-1).

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

3.1.230 Simple Service Discovery Protocol (SSDP)

3.1.230.1
SSDP
Simple Service Discovery Protocol. A multicast discovery and search mechanism that uses a multicast variant of HTTP over UDP. Defined in clause 1 on Discovery (in ISO/IEC 29341-1).

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

3.1.231 SI network access unit

3.1.231.1
SI network access unit
NAU supporting and offering the SI

Note 1 to entry: If the context makes it clear that an NAU is an SI NAU, SI will normally be omitted from the term.

[SOURCE: ISO/IEC TR 15044:2000, definition 2.60]

3.1.232 Single implementation

3.1.232.1
single implementation
single, homogeneous network implementation, where interoperability is only of concern within the single network

[SOURCE: ISO/IEC 18012-1:2004, definition 3.1.9]

3.1.233 SI static monitor signal

3.1.233.1
SI static monitor signal
one of two forms of the SI monitor signal, characterized by high signal state during the device on state, and low signal state during the device off state

[SOURCE: ISO/IEC TR 15044:2000, definition 2.61]

3.1.234 Specific WAN interface

3.1.234.1
specific WAN interface
specific interface for a WAN termination

[SOURCE: ISO/IEC 15045-1:2004, definition 3.1.18]

3.1.235 Spyware

3.1.235.1
spyware
trojan horse software that may report to an external entity information about a computer, device or network and its parameters

[SOURCE: ISO/IEC 15045-1:2004, definition 3.1.15]

3.1.236 Standardized process interface (SPI)

3.1.236.1
standardized process interface
SPI
any process interface standardized by ISO/IEC

[SOURCE: ISO/IEC TR 15044:2000, definition 2.65]

3.1.237 State variable

3.1.237.1
state variable
Single facet of a model of a physical service. Exposed by a service. Has a name, data type, optional default value, optional constraints values, and may trigger events when its value changes. For more information, see clause on Description and Control (in ISO/IEC 29341-1).

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

3.1.238 SUBNET

3.1.238.1
SUBNET
group of nodes using the same lower-layer communications protocol

Note 1 to entry: Each SUBNET has a NetID; different SUBNETS can be connected by a data link router.

[SOURCE: ISO/IEC 14543-4-1:2008, definition 3.1.25; ISO/IEC 14543-4-2:2008, definition 3.1.23]

3.1.239 Subnetwork address (SNA)

3.1.239.1
subnetwork address
SNA
part of the individual address; consists of a 4-bit line address and a 4-bit area address, that specifies the subnetwork in which the device is mounted

[SOURCE: ISO/IEC 14543-3-2:2006, definition 3.1.2]

3.1.240 Subscriber

3.1.240.1
subscriber
Recipient of event messages. Typically a control point. For more information, see clause on Eventing (in ISO/IEC 29341-1).

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

3.1.241 Telnet

3.1.241.1
telnet
terminal emulation program for TCP for remote access to computers

[SOURCE: ISO/IEC 15045-1:2004, definition 3.1.19]

3.1.242 Test device

3.1.242.1
test device
physical entity that can send, receive and validate network messages that conform to ISO/IEC 14543-5-1

[SOURCE: ISO/IEC 14543-5-4:2010, definition 3.15]

3.1.243 Topology

3.1.243.1
topology
structure of the communication paths between the medium attachment points

Note 1 to entry: Examples of topologies are: bus, ring, star, tree.

3.1.243.2
topology
the structure of the communication paths between the medium attachment points

Note 1 to entry: Examples of topologies are: bus, ring, star, tree.

[SOURCE: ISO/IEC 14543-2-1:2006, definition 3.2.30]

3.1.243.3
topology
structure of the communication paths between the medium attachments points. Examples of topologies are bus, ring, star, tree

[SOURCE: ISO/IEC TR 15044:2000, definition 2.66]

3.1.244 TP0 C Factor

3.1.244.1
TP0 C Factor
to simplify system engineering, the supply current of a TP0 device (both power supply and bus device) is expressed by a factor "C", defined as

$$C = \frac{\text{Actual current}}{\text{Reference device supply current}}$$

The actual current can either be the one provided by a power supply or used by a device

[SOURCE: ISO/IEC 14543-3-6:2007, definition 3.1.6]

3.1.245 TP0 Character

3.1.245.1
TP0 Character
11 bit set including 8 data bits, 1 check bit (odd parity bit) and two synchronization bits (start and stop bits)

[SOURCE: ISO/IEC 14543-3-6:2007, definition 3.1.7]

3.1.246 TP0 Distortion

3.1.246.1
TP0 Distortion
percentage ratio of the deviation time between the instant a transition occurs and the ideal transition instant, and the bit duration (~208 µs); the distortion is measured for each bit of a character, starting with the start bit

[SOURCE: ISO/IEC 14543-3-6:2007, definition 3.1.8]

3.1.247 TP0 Inter-Frame Time

3.1.247.1
TP0 Inter-Frame Time
time between the end of a frame (end of stop bit for the last character) and the beginning of the next frame (beginning of the start bit of the first character)

[SOURCE: ISO/IEC 14543-3-6:2007, definition 3.1.9]

3.1.248 TP0 Line Load

3.1.248.1
TP0 Line Load
percentage ratio representing the proportion of actual character transmission during a specified integration time interval

[SOURCE: ISO/IEC 14543-3-6:2007, definition 3.1.10]

3.1.249 TP0 Odd parity bit

3.1.249.1
TP0 Odd parity bit
check bit whose value is such that there is an odd number of logic “0” within the data and parity fields

[SOURCE: ISO/IEC 14543-3-6:2007, definition 3.1.11]

3.1.250 TP0 Repeater

3.1.250.1
TP0 Repeater
connects a primary segment to a secondary segment

[SOURCE: ISO/IEC 14543-3-6:2007, definition 3.1.12]

3.1.251 TP1 Backbone Couplers

3.1.251.1
TP1 Backbone Couplers
15 backbone couplers can be used to couple up to 16 zones to a full sized TP1 network

[SOURCE: ISO/IEC 14543-3-6:2007, definition 3.1.13]

3.1.252 TP1 Backbone Line

3.1.252.1
TP1 Backbone Line
main line of the inner zone is called backbone line

3.1.252.2
TP1 Backbone Line
the main line of the inner zone is called backbone line

[SOURCE: ISO/IEC 14543-3-6:2007, definition 3.1.14]

3.1.253 TP1 Bridge

3.1.253.1
TP1 Bridge
four TP1-64 physical segments can be combined to a line by using bridges; 256 devices can then be connected to such a line

[SOURCE: ISO/IEC 14543-3-6:2007, definition 3.1.15]

3.1.254 TP1 Line

3.1.254.1
TP1 Line
TP1 line consists of a maximum of 256 devices, either directly connected in case of TP1-256 or separated over 4 physical segments in case of TP1-64, each with 64 devices

3.1.254.2
TP1 Line
a TP1 line consists of a maximum of 256 devices, either directly connected in case of TP1-256 or separated over 4 physical segments in case of TP1-64, each with 64 devices

[SOURCE: ISO/IEC 14543-3-6:2007, definition 3.1.16]

3.1.255 TP1 Line Couplers

3.1.255.1
TP1 Line Couplers
routers that combine lines to a zone are called line couplers

[SOURCE: ISO/IEC 14543-3-6:2007, definition 3.1.17]

3.1.256 TP1 Logical Unit

3.1.256.1
TP1 Logical Unit
converts the serial bit stream to octets and octets to the serial bit stream, which is a serial stream of characters

[SOURCE: ISO/IEC 14543-3-6:2007, definition 3.1.18]

3.1.257 TP1 Main line

3.1.257.1
TP1 Main line
inner line of a zone is called main line

3.1.257.2
TP1 Main line
the inner line of a zone is called main line

[SOURCE: ISO/IEC 14543-3-6:2007, definition 3.1.20]

3.1.258 TP1 Medium Access Unit

3.1.258.1
TP1 Medium Access Unit
converts information signals to analogue signals and vice versa, typically extracts DC power from the medium

[SOURCE: ISO/IEC 14543-3-6:2007, definition 3.1.19]

3.1.259 TP1 Physical Segment

3.1.259.1
TP1 Physical Segment
physical segment is the smallest entity in the TP1 topology. To a physical segment of TP1-64 up to 64 devices can be connected. To a physical segment of TP1-256 up t 256 devices can be connected

3.1.259.2
TP1 Physical Segment
a physical segment is the smallest entity in the TP1 topology. To a physical segment of TP1-64 up to 64 devices can be connected. To a physical segment of TP1-256 up t 256 devices can be connected

[SOURCE: ISO/IEC 14543-3-6:2007, definition 3.1.21]

3.1.260 TP1 Polling Master

3.1.260.1
TP1 Polling Master
device transmitting a Poll_Data frame is called the TP1 Polling master or Poll_Data master

3.1.260.2
TP1 Polling Master
the device transmitting a Poll_Data frame is called the TP1 Polling master or Poll_Data master

[SOURCE: ISO/IEC 14543-3-6:2007, definition 3.1.22]