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Edition 1.0 2024-12

INTERNATIONAL STANDARD

colour inside

Information technology – Home Electronic System (HES) gateway – Part 4-2: Structure – Simple gateway



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INFORMATION TECHNOLOGY – HOME ELECTRONIC SYSTEM (HES) GATEWAY –

Part 4-2: Structure – Simple gateway

FOREWORD

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ISO/IEC 15045-4-2 has been prepared by subcommittee 25: Interconnection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology. It is an International Standard.

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

Draft	Report on voting
JTC1-SC25/3192/CDV	JTC1-SC25/3259/RVC

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

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

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1, and the ISO/IEC Directives, JTC 1 Supplement available at www.iec.ch/members_experts/refdocs and www.iso.org/directives.

A list of all parts in the ISO/IEC 15045 series, published under the general title *Information technology – Home Electronic System (HES) gateway*, can be found on the IEC and ISO websites.

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INTRODUCTION

0.1 Overview

The Home Electronic System (HES) is a set of standards that supports communication, control, and monitoring applications for homes and buildings. However, homes and buildings present a heterogeneous and evolving networked environment, where many of these networks and applications (including some that are based on HES standards) are not directly interoperable with each other. HES standards achieve interoperability through the ISO/IEC 15045 series that relies on the ISO/IEC 18012 series to support functional interworking among the dissimilar home devices, applications, protocols, and networks found in this environment. The ISO/IEC 15045 series and ISO/IEC 18012 series were created to render all protocols interoperable.

The HES gateway enables an open and adaptable market for incompatible products by specifying a standardized modular system intended to provide interoperability among the diversity of networks found in homes and buildings. The HES interoperability process does not require modification of the various networks, applications, or protocols that use it. Appropriate interworking functions translate network messages through interface modules to a common lexicon expression that is then exchanged using a private internal network bus protocol. A protected application platform using a bus protocol supports an expanding array of services for both the applications and the network.

In summary, the ISO/IEC 15045 series specifies a standardized modular dedicated private internal network system that includes:

– interfaces (i.e. interface modules) for communication and semantic translation among dissimilar home area networks (HANs), and between a HAN and external wide area networks (WANs),
– a platform for supporting a variety of application services (service modules), and
– a secure communication path among these modules with access restricted to the appropriate modules in order to protect data, safety and privacy.

0.2 Relation to existing work

The ISO/IEC 15045 series provides four classes representing alternative configurations for the implementation of HES gateway physical modularity and an internal communications path:

a) simple;
b) complex-integral;
c) complex-modular;
d) interconnected.

0.3 Simple gateway

The purpose of this document is to specify requirements for the simple HES gateway that manages and controls the communications between two networks, either two HANs or one HAN and one WAN.

Figure 1 shows the core interoperability and HES gateway series of standards, and where this document fits into the HES gateway series.

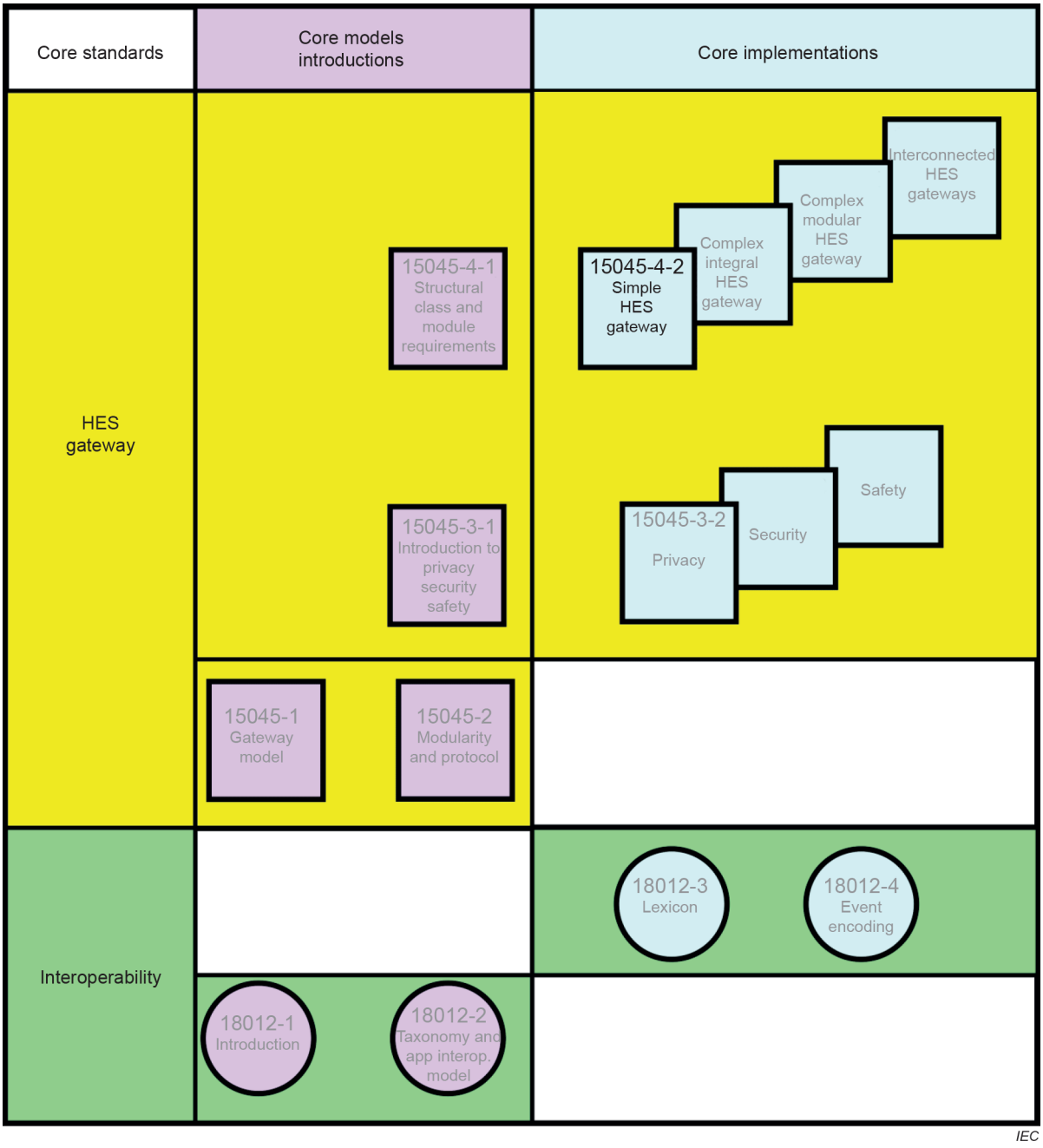


Figure 1 – ISO/IEC 15045-4-2 within the core interoperability and HES gateway standards

INFORMATION TECHNOLOGY – HOME ELECTRONIC SYSTEM (HES) GATEWAY –

Part 4-2: Structure – Simple gateway

1 Scope

This document specifies the simple HES gateway, which is one of a set of physical classes introduced in ISO/IEC 15045-1:2004.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 15045-4-1:2024, *Information technology – Home Electronic System (HES) gateway – Part 4-1: Structure – Structural class and module requirements*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at https://www.electropedia.org/
- ISO Online browsing platform: available at https://www.iso.org/obp

3.1.1
HAN interface logical module
HES gateway module that interfaces between a HAN and an event bus carrying HES-CLDPE messages

3.1.2
home area network
HAN
network serving nodes, devices, components and functions within a premises protected area

[SOURCE: ISO/IEC 15045-3-1:2024, 3.1.1]

3.1.3
logical module
HES gateway module that interfaces to an event bus carrying HES-CLDPE messages

3.1.4
protocol data unit
PDU
unit of data exchanged between peer entities