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Edition 1.0 2024-10

INTERNATIONAL STANDARD

colour inside

Information technology - Home Electronic System (HES) gateway – Part 3-2: Privacy, security, and safety – Privacy framework



ISO/IEC 15045-3-2:2024-10(en)

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INFORMATION TECHNOLOGY – HOME ELECTRONIC SYSTEM (HES) GATEWAY –

Part 3-2: Privacy, security, and safety – Privacy framework

FOREWORD

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

Draft	Report on voting
JTC1-SC25/3190/CDV	JTC1-SC25/3261/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.

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

INTRODUCTION

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, which 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 (i.e. service modules), and
- a secure communication path among these modular elements with access restricted to the appropriate elements in order to protect data, safety and privacy.

0.2 Relation to existing work

The concepts of product interoperability are introduced in ISO/IEC 18012-1. The interworking function (IWF) is specified in ISO/IEC 18012-2. The message content, including applications, interface and service objects will be specified in ISO/IEC 18012-3. The method and format of communication packet exchanges or direct API exchanges within a gateway will be specified in ISO/IEC 18012-4.

0.3 Privacy in HES gateway

The HES gateway is described in ISO/IEC 15045-1. Several structural configurations of the HES gateway are described in ISO/IEC 15045-4-1. All structural classes use the HES interoperability system described above. However, for classes that use physically separated modules, communication among modular elements is provided by a dedicated private serial bus (i.e. Ethernet) and utilizes a set of protocols now known as the common language internal protocol (CLIP), originally called the GL bus in ISO/IEC 15045-2. All HES gateway structural class configurations use the same interworking functions, including lexicon, and event encoding.

Privacy, security and safety requirements for the HES gateway are specified in ISO/IEC 15045-3-1. ISO/IEC 15045-3-2 (this document) provides specifications that fulfil the privacy requirements of ISO/IEC 15045-3-1. These privacy considerations are based upon ISO/IEC 29100.

The privacy aspects in this document are focused on individual premises, and not focused on apartment complexes or multi-family dwellings. Such situations are handled with "interconnected gateways" structural class. A future part of the ISO/IEC 15045-4 series will detail the privacy considerations and enhancements relating to these types of dwellings.

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

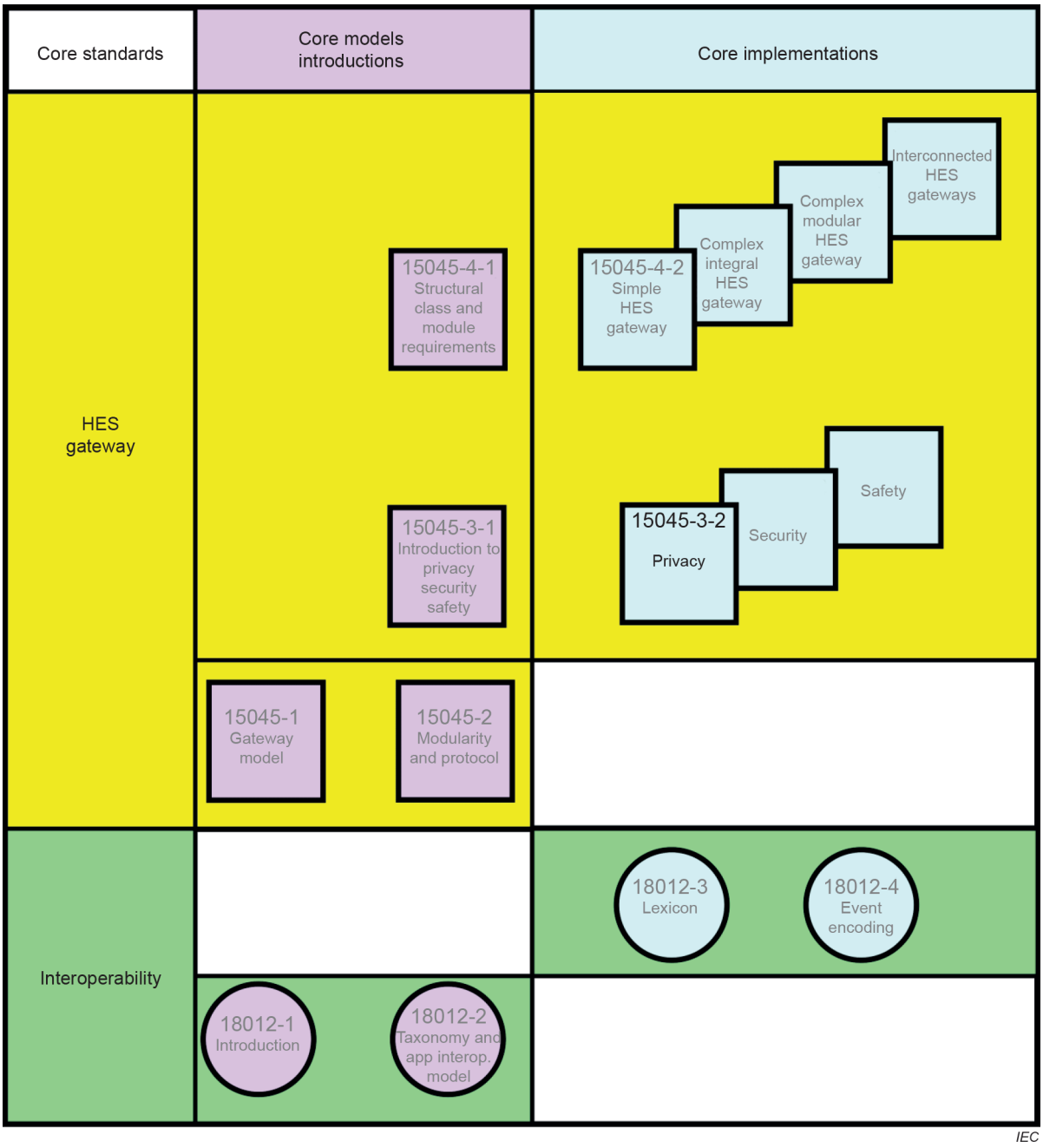


Figure 1 – ISO/IEC 15045-3-2 within the core interoperability and HES gateway standards

0.4 Future features

The HES gateway is structured to provide a foundation upon which features can be added as appropriate while maintaining the privacy, security, safety and interoperability capabilities. The interoperable objects, domains and services defined in the HES Lexicon can be expanded.

INFORMATION TECHNOLOGY – HOME ELECTRONIC SYSTEM (HES) GATEWAY –

Part 3-2: Privacy, security, and safety – Privacy framework

1 Scope

This document specifies cybersecurity requirements for protecting the privacy of premises and personally identifiable information through the use of the HES gateway and related HES standards. This document applies a set of principles including those specified in ISO/IEC 29100 that are applicable to the HES gateway such as consent, purpose legitimacy, collection limitation, data minimization, retention, accuracy, openness, and individual access.

2 Normative references

There are no normative references in this document.

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
binding map
table that links inputs to outputs

3.1.2
controller service module
HES gateway service module that performs setup and configuration

Note 1 to entry: This module is similar to the "PII controller" in ISO/IEC 29100.

3.1.3
HES gateway
electronic device that transfers messages among WANs and HANs providing interoperability, privacy, security and safety in accordance with the requirements of the ISO/IEC 15045 series and ISO/IEC 18012 series standards

Note 1 to entry: For an HES gateway, a WAN is a network outside the protected area and a HAN is a network inside the protected area.

[SOURCE: ISO/IEC 15045-3-1:2024, 3.1.3]