ISO/IEC TR 14543-1

Edition 1.0 2000-10

TECHNICAL REPORT

Information technology – Home electronic system (HES) architecture – Part 1: Introduction

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 35.240.67

ISBN 2-8318-5532-2

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INFORMATION TECHNOLOGY – HOME ELECTRONIC SYSTEM (HES) ARCHITECTURE

Part 1: Introduction

FOREWORD

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2) In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

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Technical reports of types 1 and 2 are subject to review within three years of publication to decide whether they can be transformed into International Standards. Technical reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

ISO/IEC 14543-1, which is a technical report of type 2, was prepared by subcommittee 25: Interconnection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology.

This publication has been drafted in accordance with ISO/IEC directives, Part 3.

This document is issued in the type 2 technical report series of publications (according to 15.2.2 of the Procedures for the technical work of ISO/IEC JTC 1 (1998)) as a prospective standard for provisional application in the field of Home Electronic Systems (HES), because there is an urgent requirement for guidance on how standards in this field should be used to meet an identified need.

This document is not to be regarded as an International Standard. It is proposed for provisional application so that information and experience of its use in practice may be gathered. Comments on the content of this document should be sent to IEC Central Office.

A review of this type 2 technical report will be carried out not later than three years after its publication with the option of extension for a further three years or conversion either to an International Standard or withdrawal.

ISO/IEC TR 14543 Information technology – Home Electronic System (HES) architecture consists of three parts:

Part 1: Introduction

Part 2: Device modularity

Part 3: Communication layers

INTRODUCTION

Various electrically controlled devices are used in homes and similar environments for many different applications. Examples of such applications are: lighting, heating, food preparation, washing, energy management, water control, fire alarms, blinds control, different forms of security control and entertainment (audio and video). An overview of such applications is given in the “Catalogue of Applications of the HES” (see Informative reference).

When several such devices are able to interwork via a common internal network (in this document called a home network), the resulting total system is called a home control system. When a home control system follows all the specifications in the ISO/IEC *HES Standards*, it is called a Home Electronic System (HES).

Three different classes of HES are defined. Class 1 has transport capabilities for telecontrol applications only. Class 2 includes Class 1, but also supports switched medium bandwidth data channels. Class 3 includes Classes 1 and 2 and in addition supports high bandwidth switched data channels.

A home network may be based on one or more different media (for example power line, balanced cables, infrared or radio) and may also be connected to outside networks (for example telephone, cable television, power and alarm networks).

An implementation of the Home Electronic System will typically be assembled by a consumer, one application at a time, starting from single applications like lighting control, security control or audio and video control, to develop eventually into an integrated multi-application system. The cost of adding an application depends on whether rewiring of the house is needed or whether existing cables and prefitted ducts can be used. Hence the HES standards and supplementary technical reports will also give guidance to architects and builders as well as to users on how to share such resources.

Lifetime and innovation cycles vary between one device and another and between devices and networks. To make it possible to add and to change existing devices as well as to enlarge and to upgrade the home network keeping the existing devices, several stable interfaces, the Universal Interface (UI) and the Process Interfaces (PIs) are defined between the home network and the devices. The PIs are meant for simple devices not requiring the full implementation of the HES application protocol. By using these interfaces a manufacturer can design a device both to meet his specific marketing objectives and to give the option to integrate that special device into a multi-application Home Electronic System. This added value allows the user to take advantage of synergy between different applications.

To allow manufacturers to implement cheaper devices/network combinations, an HES conformance type B is defined. In this case a device connects directly to the medium without showing the UI or a PI. These devices will, however, be medium dependent and do not have the advantages of devices with full HES conformance (type A conformance where the devices include the Universal Interface).

INFORMATION TECHNOLOGY – HOME ELECTRONIC SYSTEM (HES) ARCHITECTURE

Part 1: Introduction

1 Scope

This part of ISO/IEC 14543 gives an introductory description of the Home Electronic System.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 14543. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO/IEC 14543 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO/IEC 2382-26:1993, *Information technology – Vocabulary – Part 26: Open Systems Interconnection*

ISO/IEC TR 15044:2000, *Information technology – Terminology for the Home Electronic System (HES)*