

TECHNICAL REPORT

ISO/IEC
TR 14543-3

First edition
2000-05

**Information technology –
Home electronic systems (HES) architecture –
Part 3:
Communication Layers**



Reference number
ISO/IEC/TR 14543-3:2000(E)

TECHNICAL REPORT

ISO/IEC
TR 14543-3

First edition
2000-05

Information technology – Home electronic systems (HES) architecture – Part 3: Communication Layers

© ISO/IEC 2000

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

ISO/IEC Copyright Office • Case postale 56 • CH-1211 Genève 20 • Switzerland



PRICE CODE

J

For price, see current catalogue

CONTENTS

	Page
FOREWORD	3
Clause	
1 Scope	5
2 Reference documents	5
3 Definitions.....	5
3.1 Basic reference model definitions	5
3.2 Definitions from ISO/IEC 2382-25	6
3.3 Definitions from ISO/IEC 2382-26	6
3.4 Definitions from the HES terminology.....	6
4 HES reference model.....	6
4.1 General.....	6
4.2 HES Communication model.....	8
4.2.1 Physical Layer	8
4.2.2 Data Link Layer.....	8
4.2.3 Network Layer.....	9
4.2.4 Transport Layer	9
4.2.5 Session Layer	9
4.2.6 Presentation Layer.....	9
4.2.7 Application Layer	9
4.3 HES application model.....	10
4.4 HES Management model	13
4.4.1 HES system management	13
4.4.2 HES application management	15
5 Classes.....	16

INFORMATION TECHNOLOGY – HOME ELECTRONIC SYSTEMS (HES) ARCHITECTURE –

Part 3: Communication Layers

FOREWORD

- 1) ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.
- 2) In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC1. 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.
- 3) Attention is drawn to the possibility that some of the elements of this Technical Report may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

The main task of IEC and ISO technical committees is to prepare International Standards. In exceptional circumstances, a technical committee may propose the publication of a technical report of one of the following types:

- type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;
- type 2, when the subject is still under technical development or where for any other reason there is the future but not immediate possibility of an agreement on an International Standard;
- type 3, when the technical committee has collected data of a different kind from that which is normally published as an International Standard, for example 'state of the art'.

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 14543-3, 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.

International Standards are 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 JTC1 (1998)) as a prospective standard for provisional application in the field of Home Electronic Systems (HES) architecture, 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 the 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 options of extension for a further three years of conversion either to an International Standard or withdrawal.

ISO/IEC 14543 consists of the following parts, under the general title *Information technology – Home electronic systems (HES) architecture*:

- *Part 1: Introduction*
- *Part 2: Device modularity*
- *Part 3: Communication layers*

Additional parts are under consideration.

INFORMATION TECHNOLOGY – HOME ELECTRONIC SYSTEMS (HES) ARCHITECTURE –

Part 3: Communication Layers

1 Scope

This part of ISO/IEC 14543 describes the architecture of a standardised home control system, called the Home Electronic System, HES.

It discusses the communication and interoperability aspects of HES. It uses the Open Systems Interconnection (OSI) model, or more precisely: the layering principles borrowed from OSI. Hence the HES reference model defines the modular (layered) structure of the HES communication protocol.

The detailed issues of addressing and application protocols for the Home Electronic System of different classes will be given in related standards.

NOTE The concept of Functional Groupings (FG) and Reference Points (RP) provides a means to model device modularity, and hence provides a basis for device interface standards. This is dealt with in ISO/IEC TR 14543-2 (under preparation).

2 Reference documents

ISO/IEC 2382-25:1992, *Information technology – Vocabulary – Part 25: Local Area Networks*

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

ISO/IEC 7498-1:1994, *Information technology – Open Systems Interconnection – Basic Reference Model: The Basic Model*

ISO 7498-2:1989, *Information processing systems – Open Systems Interconnection – Basic Reference Model – Part 2: Security Architecture*

ISO/IEC 7498-3:1997, *Information technology – Open Systems Interconnection – Basic Reference Model: Naming and addressing*

ISO/IEC 7498-4:1989, *Information processing systems – Open Systems Interconnection – Basic Reference Model – Part 4: Management framework*

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

3 Definitions

For the purpose of this part of ISO/IEC TR 14543, the following definitions apply.

3.1 Basic reference model definitions

The following terms are defined in ISO/IEC 7498-1:

(N)-entity

(N)-service-data-unit