



# TECHNICAL REPORT

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**Information technology – Home electronic system (HES) architecture –  
Part 4: Home and building automation in a mixed use building**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Definitions.....	6
3 Relationship between home and building control.....	7
3.1 Control systems for a mixed-use building.....	7
3.2 Application interaction.....	8
3.2.1 Physical architecture.....	8
3.2.2 Logical architecture.....	10
3.2.3 Messages among application domains.....	15
4 Interconnected building and home systems.....	16
4.1 Linking building and home control.....	16
4.2 Network interface capabilities.....	16
4.3 An integrated control system.....	16
Figure 1 – Automation network spanning multiple media.....	9
Figure 2 – Physical components comprising application domains.....	10
Figure 3 – An application domain with application control.....	11
Figure 4 – Logical architecture of an HES application domain.....	11
Figure 5 – Interconnecting application domains as peers.....	12
Figure 6 – Interconnecting applications via an application co-ordinator.....	13
Figure 7 – Example of a distributed application domain.....	13
Figure 8 – Logical Representation of Example in Figure 7.....	14
Figure 9 – Multiple application domains with distributed control.....	15
Figure 10 – Physical integration of building services control as a controller based system.....	17
Figure 11 – Physical Integration of building services control as a fully distributed system.....	18

## INFORMATION TECHNOLOGY – HOME ELECTRONIC SYSTEM (HES) ARCHITECTURE

### Part 4: Home and building automation in a mixed-use building

#### FOREWORD

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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 Technical reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.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 TR 14543-4, 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 was drafted in accordance with the ISO/IEC Directives, Part 2.

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 the Home Electronic System (HES), because there is an urgent requirement for guidance on how standards in this field should be used.

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 of either conversion into an International Standard or withdrawal.

ISO/IEC TR 14543, *Information technology – Home Electronic system (HES) architecture* consists of four parts:

*Part 1: Introduction*

*Part 2: Device modularity*

*Part 3: Communication layers*

*Part 4: Home and building automation in a mixed-use building*

## INTRODUCTION

This technical report explores the similarities and differences between home and building control systems in an environment where both home and building control interact, namely, a mixed-use residential/commercial building.

A logical model for linking building and home control systems is specified. Models showing the organization of application domains, such as energy management and lighting, are included. The option of managing an application domain with a single application controller versus a Fully Distributed System is considered.

Methods for overall building management are presented. The interaction of building and home control systems requires a demarcation between building manager versus tenant responsibilities, as explained in this document. A method for implementing agreements between building managers and tenants regarding user access to and control of applications via a firewall is specified.

## **INFORMATION TECHNOLOGY – HOME ELECTRONIC SYSTEM (HES) ARCHITECTURE**

### **Part 4: Home and building automation in a mixed-use building**

#### **1 Scope**

This part of ISO/IEC 14543 presents methods for overall building management of the home electronic system (HES) architecture. The interaction of building and home control systems requires a demarcation between building manager versus tenant responsibilities. A method for implementing agreements between building managers and tenants regarding user access to and control of applications via a firewall is specified.

This technical report augments series ISO/IEC 14543, the architecture of HES (Home Electronic System), in order to accommodate both home and building automation in a mixed-use building. Both systems may coexist in a building with shops, offices and apartments. Some systems are applicable to the whole building versus the systems which are applicable to individual apartments and offices only. In some cases these systems need to interact.

This technical report proposes a logical model for linking building and home control systems even if the two use different physical arrangements of components. The basic recommendations are:

- allow for distinct and separate building and home automation control systems, possibly supplied by different manufacturers;
- define clear points of connection between building and home control systems;
- limit the number of points of connection between building and home control systems, preferably to one per home system;
- accommodate systems that provide building tenants with user control of local systems. This favors an architecture where products can be designed for the user to override control decisions within parameters agreed with building management. Such actions are exercised by the building automation system and affect local systems. This enhances user safety and user privacy;
- provide seamless links between systems that are based on different architectures, that incorporate different communications protocols, and that may be purchased from different manufacturers.