# Olme- ja hooneelektroonikasüsteemid. Osa 1: Standardimissüsteem

Home and Building Electronic Systems (HBES) - Part 1: Standardization structure

EESTI STANDARDIKESKUS
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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

| | |
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| Käesolev Eesti standard EVS-EN 50090-1:2011 sisaldab Euroopa standardi EN 50090-1:2011 ingliskeelset teksti. | This Estonian standard EVS-EN 50090-1:2011 consists of the English text of the European standard EN 50090-1:2011. |
| Standard on kinnitatud Eesti Standardikeskuse 31.03.2011 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas. | This standard is ratified with the order of Estonian Centre for Standardisation dated 31.03.2011 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation. |
| Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 25.02.2011. | Date of Availability of the European standard text 25.02.2011. |
| Standard on kättesaadav Eesti standardiorganisatsioonist. | The standard is available from Estonian standardisation organisation. |



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EUROPEAN STANDARD

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# EN 50090-1

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English version

## Home and Building Electronic Systems (HBES) - Part 1: Standardization structure

Systèmes électroniques pour les foyers domestiques et les bâtiments (HBES) - Partie 1: Structure de la norme

Elektrische Systemtechnik für Heim und Gebäude (ESHG) - Teil 1: Aufbau der Norm



This European Standard was approved by CENELEC on 2011-02-21. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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## Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 205, Home and Building Electronic Systems, joined by the co-operating partner Konnex Association.

The text of the draft was submitted to the Unique Acceptance Procedure and was accepted by CENELEC as EN 50090-1 on 2011-02-21.

This document supersedes EN 50090-2-1:1994.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2012-02-21
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2014-02-21

EN 50090-1 is part of the EN 50090 series "Home and Building Electronic Systems (HBES)", which will comprise the following parts (see Clause 2 for further details):

Part 1: Standardization structure;

Part 2: Void;

NOTE EN 50090-2-1:1994 is incorporated and superseded by this Part 1.

EN 50090-2-2:1996 and its amendments are incorporated and superseded by EN 50491-3:2009, EN 50491-5-1:2010, EN 50491-5-2:2010 and EN 50491-5-3:2010.

EN 50090-2-3:2005 will be incorporated and superseded by the EN 50491 series.

Part 3: Aspects of application;

Part 4: Transport layer and network layer;

Part 5: Media and media dependent layers;

Part 6: Interfaces;

Part 7: Management;

Part 8: Conformity assessment of products;

Part 9: Installation requirements.

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## Introduction

This European Standard outlines the main elements of the HBES Open Communication System and the concept behind it. It should be used as a guideline for the EN 50090 series.

Home and Building Electronic Systems as provided by the HBES Open Communication System are a specialized form of automated, decentralised and distributed process control, dedicated to the needs of home and building applications.

The specification of the HBES Open Communication System provides, besides runtime characteristics, a "toolkit" of services and mechanisms for network management.

On the HBES Open Communication System Device Network, all devices form distributed applications, which are able to interact with one another taking into account Interworking rules (standardized Datapoint Types and "Functional Block" objects, modelling logical device channels). This run-time Interworking allows the creation of a comprehensive and multi-domain home and building communication system

The available communication media range from Twisted Pair to Powerline and 868 MHz band Radio Frequency.

The HBES Open Communication system is independent of any specific microprocessor platform or architecture. Depending on the profile chosen by the manufacturer, any suitable industry-standard chip can be chosen. Some HBES Open Communication System profiles allow a tiny system footprint (say < 5 kbit) and can run on an 8-bit processor. Implementations can however also be realised on 16- or 32-bit processors, or even PC's.

The features of HBES Open Communication System allow its use in different application domains and installation types, and also in "Service Network" environments (usually based on broadband networks running IP, the Internet Protocol). To address this need, the transmission of HBES Open Communication System frames across an IP network has been standardised in EN 50090-4-3:2007.

## 1 Scope

This European Standard concentrates on control applications for Home and Building HBES Open Communication System and covers any combination of electronic devices linked via a digital transmission network. Home and Building Electronic System as provided by the HBES Open Communication System is a specialized form of automated, decentralised and distributed process control, dedicated to the needs of home and building applications.

The EN 50090 series concentrates on HBES Open Communication System Class 1 and includes a specification for a communication network for Home and Building for example for the control of lighting, heating, food preparation, washing, energy management, water control, fire alarms, blinds control, different forms of security control, etc.

This European Standard gives an overview of the features of the HBES Open Communication System and provides the reader with references to the different parts of EN 50090 series.

This European Standard is used as a product family standard. It is not intended to be used as a stand-alone standard.

## 2 Normative references

The following referenced documents are indispensable for the application 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.

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| EN 50090-3-1 | 1994 | Home and Building Electronic Systems (HBES) – Part 3-1: Aspects of application – Introduction to the application structure |
| EN 50090-3-2 | 2004 | Home and Building Electronic Systems (HBES) – Part 3-2: Aspects of application – User process for HBES Class 1 |
| EN 50090-3-3 | 2009 | Home and Building Electronic Systems (HBES) – Part 3-3: Aspects of application – HBES Interworking model and common HBES data types |
| EN 50090-4-1 | 2004 | Home and Building Electronic Systems (HBES) – Part 4-1: Media independent layers – Application layer for HBES Class 1 |
| EN 50090-4-2 | 2004 | Home and Building Electronic Systems (HBES) – Part 4-2: Media independent layers – Transport layer, network layer and general parts of data link layer for HBES Class 1 |
| EN 50090-4-3 | 2007 | Home and Building Electronic Systems (HBES) – Part 4-3: Media independent layers – Communication over IP (EN 13321-2:2006) |
| EN 50090-5-1 | 2005 | Home and Building Electronic Systems (HBES) – Part 5-1: Media and media dependent layers – Power line for HBES Class 1 |
| EN 50090-5-2 | 2004 | Home and Building Electronic Systems (HBES) – Part 5-2: Media and media dependent layers – Network based on HBES Class 1, Twisted Pair |
| EN 50090-5-3 | 2006 | Home and Building Electronic Systems (HBES) – Part 5-3: Media and media dependent layers – Radio frequency |
| EN 50090-7-1 | 2004 | Home and Building Electronic Systems (HBES) – Part 7-1: System management – Management procedures |
| EN 50090-8 | 2000 | Home and Building Electronic Systems (HBES) – Part 8: Conformity assessment of products |

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|---|---|---|
| EN 50090-9-1 | 2004 | Home and Building Electronic Systems (HBES) – Part 9-1: Installation requirements – Generic cabling for HBES Class 1 Twisted Pair |
| CLC/TR 50090-9-2 | 2007 | Home and Building Electronic Systems (HBES) – Part 9-2: Installation requirements – Inspection and testing of HBES installation |
| EN 50491-2 | 2010 | General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) – Part 2: Environmental conditions |
| EN 50491-3 | 2009 | General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) – Part 3: Electrical safety requirements |
| EN 50491-5-1 | 2010 | General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) – Part 5-1: EMC requirements, conditions and test set-up |
| EN 50491-5-2 | 2010 | General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) – Part 5-2: EMC requirements for HBES/BACS used in residential, commercial and light industry environment |
| EN 50491-5-3 | 2010 | General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) – Part 5-3: EMC requirements for HBES/BACS used in industry environment |
| CLC/TR 50552 | 2010 | Home and Building Electronic Systems (HBES) – Open communication system – Interfaces – Medium interface, twisted pair, class 1 |



# 3 Terms, definitions and abbreviations

## 3.1 Terms and definitions

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

**3.1.1**
**Home and Building Electronic Systems (HBES)**
communication system on which elements or entities of several applications are distributed and logically linked together via one or more networks

**3.1.2**
**HBES Open Communication System**
HBES according to EN 50090 series

**3.1.3**
**HBES Class 1**
HBES with transport capabilities for applications such as:

– control;
– monitoring;
– measurement;
– alarm;
– low speed data transfer