

Open Data Communication in Building Automation, Controls and Building Management - Building Network Protocol - Part 1: Protocol Stack

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 14908-1:2005 sisaldab Euroopa standardi EN 14908-1:2005 ingliskeelset teksti. Käesolev dokument on jõustatud 28.12.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 14908-1:2005 consists of the English text of the European standard EN 14908-1:2005. This document is endorsed on 28.12.2005 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.
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Käsitlusala: This specification applies to a communication protocol for networked control systems. The protocol provides peerto-peer communication for networked control and is suitable for implementing both peer-to-peer and master-slave control strategies.	Scope: This specification applies to a communication protocol for networked control systems. The protocol provides peerto-peer communication for networked control and is suitable for implementing both peer-to-peer and master-slave control strategies.
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English Version

Open Data Communication in Building Automation, Controls and Building Management - Building Network Protocol - Part 1: Protocol Stack

Réseau ouvert de communication de données pour
l'automatisation, la régulation et la gestion techniques du
bâtiment - Protocole de réseau pour le bâtiment - Partie 1 :
Niveaux du protocole

Firmenneutrale Datenkommunikation für die
Gebäudeautomation und Gebäudemanagement -
Gebäudedatennetzprotokoll - Teil 1:
Datenprotokollschichtenmodell

This European Standard was approved by CEN on 11 August 2005.

CEN 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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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Foreword

This European Standard (EN 14908-1:2005) has been prepared by CEN /TC 247, "Building Automation, Controls and Building Management", the secretariat of which is held by SNV.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2006, and conflicting national standards shall be withdrawn at the latest by May 2006.

This European Standard supersedes ENV 13154—2:1998.

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CEN draws attention to the fact that it is claimed that compliance with this European Standard may involve the use of patents. The patents that pertain to this European Standard are listed in Annex F.

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This European Standard is part of a series of European Standards for open data transmission in building automation, control and in building management systems. The content of this standard covers the data communications used for management, automation/control and field functions. This European Standard is based on the American standards EIA/CEA-709.1-B Control Network Protocol Specification.

The EN 14908-1 is part of a series of European Standards under the general title *Control Network Protocol (CNP)*, which comprises the following parts:

Part 1: *Protocol Stack*

Part 2: *Twisted Pair Communication*

Part 3: *Power Line Channel Specification*

Part 4: *IP-Communication*

Part 5 : *Project Implementation Guideline*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

This European Standard has been prepared to provide mechanisms through which various vendors of building automation, control, and building management systems may exchange information in a standardised way. It defines communication capabilities.

This European Standard is to be used by all involved in design, manufacture, engineering, installation and commissioning activities.

This European Standard has been made in response to the essential requirements of the Constructive Products Directive.

1 Scope

This specification applies to a communication protocol for networked control systems. The protocol provides peer-to-peer communication for networked control and is suitable for implementing both peer-to-peer and master-slave control strategies. This specification describes services in layers 2 - 7. In the layer 2 (data link layer) specification, it also describes the MAC sub-layer interface to the physical layer. The physical layer provides a choice of transmission media. The interface described in this specification supports multiple transmission media at the physical layer. In the layer 7 specification, it includes a description of the types of messages used by applications to exchange application and network management data.

2 Normative references

Not applicable

3 Terms and definitions

For the purposes of this European Standard, the following subclause introduces the basic terminology employed throughout this European Standard. Most of it is commonly used and the terms have the same meaning in both the general and the standard context. However, for some terms, there are subtle differences. For example, in general, bridges do selective forwarding based on the layer 2 destination address. There are no layer 2 addresses in this standard protocol, so bridges forward all packets, as long as the domain address in the packet matches a domain of which the bridge is a member. Routers, in general, perform network address modification so that two protocols with the same transport layer but different network layers can be connected to form a single logical network. Routers of this standard may perform network address modification, but typically they only examine the network address fields and selectively forward packets based on the network layer address fields.

3.1

Channel

physical unit of bandwidth linking one or more communication nodes. Refer to Annex E for further explanation of the relationship between a channel and a subnet

3.2

Physical Repeater

device that reconditions the incoming physical layer signal on one channel and retransmits it on to another channel

3.3

Store-and-Forward Repeater

device that stores and then reproduces data packets on to a second channel

3.4

Bridge

device that connects two channels (x and y); forwards all packets from x to y and vice versa, as long as the packets originate on one of the domain(s) that the bridge belongs to

3.5

Configuration

non-volatile information used by the device to customise its operation. There is configuration data for the correct operation of the protocol in each device, and optionally, for application operation. The network configuration data stored in each device has a checksum associated with the data. Examples of network configuration data are node addresses, communication media parameters such as priority settings, etc. Application configuration information is application specific

3.6

Domain

virtual network that is the network unit of management and administration. Group and subnet (see below) addresses are assigned by the administrator responsible for the domain, and they have meaning only in the context of that domain