

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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

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

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

Offene Datenkommunikation für die Gebäudeautomation
und Gebäudemanagement - Gebäude-Netzwerk-Protokoll -
Teil 1: Datenprotokollschichtenmodell

This European Standard was approved by CEN on 12 April 2013.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 14908-1:2014) has been prepared by Technical Committee 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of an identical text or by endorsement, at the latest by October 2014 and conflicting national standards shall be withdrawn at the latest by October 2014.

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

This document supersedes EN 14908-1:2005.

This European Standard is part of a series of standards for open data transmission in building automation, control and in building management systems. The content of this European Standard covers the data communications used for management, automation/control and field functions.

The following is a list of technical changes since the previous edition:

- EN 14908-5 has been added to the normative references;
- the normative Annex A has been re-worked for a better understanding. The reference implementation of the standard shows in detail which part is normative and hardware independent, which one is normative but hardware dependent and which one is not normative because it is hardware dependent. This information supports the development of a protocol stack and the understanding of the specified communication services.

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: *Implementation*;

Part 6: *Application elements*.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the 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 will be used by all involved in design, manufacture, engineering, installation and commissioning activities.

1 Scope

This European Standard applies to a communication protocol for networked control systems in commercial Building Automation, Controls and Building Management. 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 to 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

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 14908-5, *Open Data Communication in Building Automation, Controls and Building Management Implementation Guideline - Control Network Protocol - Part 5: Implementation*

3 Terms and definitions

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

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.

Note 1 to entry: 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 onto another channel

3.3

store-and-forward repeater

device that stores and then reproduces data packets onto a second channel