ISO/IEC 11801-4

Edition 1.0 2017-11

INTERNATIONAL STANDARD

Information technology – Generic cabling for customer premises
Part 4: Single-tenant homes

ISO/IEC 11801-4:2017-11(en)

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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 35.200

ISBN 978-2-8322-5035-8

CONTENTS

INFORMATION TECHNOLOGY – GENERIC CABLING FOR CUSTOMER PREMISES

Part 4: Single-tenant homes

FOREWORD

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International Standard ISO/IEC 11801-4 was prepared by subcommittee 25: Interconnection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology.

This first edition cancels and replaces ISO/IEC 15018:2004 and Amendment 1:2009. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) standard re-structured to contain only those requirements that are specific for generic cabling systems installed in homes;

b) the channel performance Class CCCB and related reference implementations have been deleted and are now addressed as distributed building services in ISO/IEC 11801-6;

c) implementation options now include optical fibre in addition to balanced and coaxial media.

ISO/IEC 11801-4 is to be read in conjunction with ISO/IEC 11801-1.

This International Standard has been approved by vote of the member bodies, and the voting results may be obtained from the address given on the second title page.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the ISO/IEC 11801 series, published under the general title *Information technology – Generic cabling for customer premises*, can be found on the IEC website.

The contents of the corrigendum of April 2018 have been included in this copy.

INTRODUCTION

The importance of cabling infrastructure is similar to that of other fundamental utilities such as water and energy supply and interruptions to the services provided over that infrastructure can have a serious impact. A lack of design foresight, the use of inappropriate components, incorrect installation, poor administration or inadequate support can threaten quality of service and have commercial consequence for all types of users.

This document specifies generic cabling within a home.

The home can contain one or more buildings (e.g. farm) or be within a building which contains more than one home (e.g. one home in a multi-tenant building).

The campus or backbone cabling connecting individual homes within multi-tenant premises is specified according to the relevant standard (for instance ISO/IEC 11801-1 or IEC 60728).

Generic cabling for distributed building services in homes is specified in ISO/IEC 11801-6, which addresses all of the above premises and spaces within them.

Figure 1 shows the schematic and contextual relationships between the standards relating to information technology cabling produced by ISO/IEC JTC 1/SC 25, namely the ISO/IEC 11801 series of standards for generic cabling design, standards for the installation, operation and administration of generic cabling and for testing of installed generic cabling.

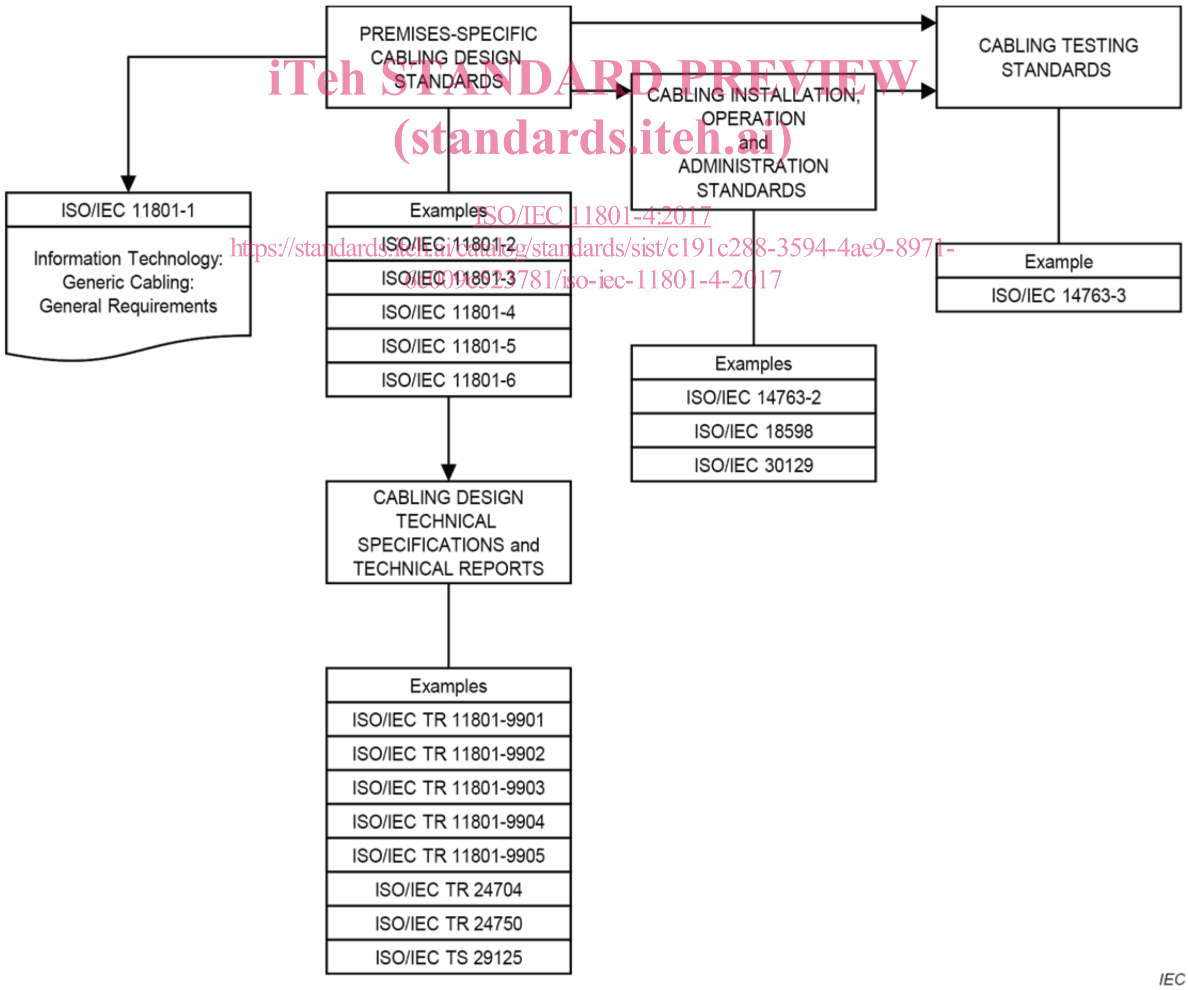

Figure 1 – Relationships between the generic cabling documents produced by ISO/IEC JTC 1/SC 25

The generic cabling specified by this document provides users with

a) an application independent system capable of supporting a wide range of applications in a range of installation and operating environments,

b) a flexible scheme such that modifications are both easy and economical,

c) a multi-vendor supply chain within an open market for cabling components.

In addition, this document provides

d) relevant industry professionals with guidance allowing the accommodation of cabling before specific requirements are known, i.e. in the initial planning either for construction or refurbishment and for further deployment as the requirements of areas are defined,

e) industry and standardization bodies with a cabling system which supports current products and provides a basis for future product development and applications standardization,

f) users, designers and manufacturers of application-specific cabling systems with advice on interfacing to this generic cabling,

g) suppliers of cabling components and installers of cabling with relevant requirements,

h) service providers with a distribution system for their services.

Applications addressed in this document include those developed by the technical committees of IEC (including the subcommittees of ISO/IEC JTC 1) and study groups of ITU-T as used to support the following services:

- information and communications technologies (ICT),
- broadcast and communications technologies (BCT).

This document also applies where cabling is designed to support only one of the services listed above.

Physical layer requirements for the applications listed in Annex E of ISO/IEC 11801-1:2017 have been analysed to determine their compatibility with the cabling performance specified in this document and, together with statistics concerning premises geography from different countries and the models described in Clause 6, have been used to develop the requirements for cabling components and to stipulate their arrangement into cabling systems.

As a result, this document

1) specifies a structure for generic cabling supporting a wide variety of applications including, but not restricted to, the applications in ISO/IEC 11801-1:2017, Annex E,

2) adopts balanced cabling channel and link Classes D, E, E_A, F, F_A and BCT-B specified in ISO/IEC 11801-1,

3) adopts coaxial cabling channel and link Classes BCT-C specified in ISO/IEC 11801-1,

4) adopts optical fibre cabling channel and link requirements specified in ISO/IEC 11801-1,

5) adopts component requirements, specified in ISO/IEC 11801-1, and specifies cabling implementations that ensure performance of permanent links and of channels that meet or exceed the requirements of a specified group (e.g. Class) of applications.

Life expectancy of generic cabling systems can vary depending on environmental conditions, supported applications, aging of materials used in cables, and other factors such as access to pathways (campus pathways are more difficult to access than building pathways). With appropriate choice of components, generic cabling systems meeting the requirements of this document are expected to have a life expectancy of at least ten years.

This document has taken into account requirements specified in application standards listed in ISO/IEC 11801-1:2017, Annex E. It refers to International Standards for components and test methods whenever appropriate International Standards are available.

INFORMATION TECHNOLOGY – GENERIC CABLING FOR CUSTOMER PREMISES

Part 4: Single-tenant homes

1 Scope

This part of ISO/IEC 11801 specifies generic cabling for single-tenant homes. A home can contain one or more buildings or can be within a building that contains more than one home. It covers balanced cabling, optical fibre cabling and coaxial cabling.

This document specifies a generic cabling for two groups of applications:

1) information and communications technologies (ICT),
2) broadcast and communications technologies (BCT).

This document specifies directly or via reference to ISO/IEC 11801-1

a) the structure and minimum configuration for generic cabling within homes,
b) the interfaces at the telecommunications outlet (TO) and broadcast outlet (BO),
c) the performance requirements for cabling links and channels,
d) the implementation requirements and options,
e) the performance requirements for cabling components,
f) the conformance requirements and verification procedures.

Safety and electromagnetic compatibility (EMC) requirements are outside the scope of this document, and are covered by other standards and by regulations. However, information given by this document can be of assistance.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

IEC 60728 (all parts), *Cable networks for television signals, sound signals and interactive services*

IEC 61754-20 (all parts), *Fibre optic interconnecting devices and passive components – Fibre optic connector interfaces – Part 20: Type LC connector family*

ISO/IEC 11801-1:2017, *Information technology – Generic cabling for customer premises – Part 1: General requirements*

ISO/IEC 14763-2, *Information technology – Implementation and operation of customer premises cabling – Part 2: Planning and installation*

ISO/IEC 30129, *Information technology – Telecommunications bonding networks for buildings and other structures*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 11801-1, ISO/IEC 14763-2 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1.1
application outlet
telecommunications outlet or broadcast outlet

3.1.2
balun
device to provide impedance transformation between balanced and unbalanced components

3.1.3
broadcast outlet
fixed connecting device which provides an interface to the terminal equipment

3.1.4
coverage area
area within a home covered by any application

3.1.5
home
physical structure used as a dwelling place

EXAMPLE A house or an apartment.

Note 1 to entry: This can be an individual building, part of a larger building or more than one building.

3.1.6
home network interface
interface for access to the network for distribution of television signals, sound signals and interactive services inside a single-tenant home

3.1.7
primary home cable
cable that connects a primary home distributor to a telecommunications outlet or broadcast outlet or to a secondary home distributor where present

3.1.8
primary home distributor
distributor from which the primary home cable starts

3.1.9
secondary home cable
cable that connects a secondary home distributor to a telecommunications outlet or broadcast outlet

3.1.10
secondary home distributor
distributor used to provide additional infrastructure flexibility and/or allocate transmission equipment between the primary home distributor and coverage areas (e.g. for homes with multiple floors)

3.2 Abbreviated terms

For the purposes of this document, the abbreviated terms given in ISO/IEC 11801-1 and the following apply.

BO broadcast outlet

ENI external network interface

HNI home network interface

PHD primary home distributor