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Information technology - Generic cabling for customer premises - Part 6: Distributed building services

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Information technology - Generic cabling for customer premises - Part 6: Distributed building services

FOREWORD

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This consolidated version of the official IEC Standard and its amendment has been prepared for user convenience.

ISO/IEC 11801-6 edition 1.1 contains:

- the first edition (2017-11)
- the amendment 1 (2026-09) [documents JTC1-SC25/3364/FDIS and JTC1-SC25/3370/RVD]
- the corrigendum 1 (2018-04)

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.

International Standard ISO/IEC 11801-6 was prepared by subcommittee 25: Interconnection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology.

ISO/IEC 11801-6 is to be read in conjunction with ISO/IEC 11801-1, which was created to consolidate general requirements for generic cabling into a single standard which allows the other standards in the ISO/IEC 11801 series to have a common reference.

This International Standard has been approved by vote of the member bodies, and the voting results can 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.

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 for distributed building services and can be used alone or in conjunction with all the premises-specific standards of the ISO/IEC 11801 series.

It has been prepared to reflect the increasing use of generic cabling in support of non-user specific services and the sharing of information between such services, many of which require the use of remote powered devices. The distribution of these services is implemented either as a stand-alone structure and configuration or as an overlay provided to locations other than those specified by premises-specific standards in the ISO/IEC 11801 series.

This document is not intended to replace the application of other premises-specific standards in the ISO/IEC 11801 series but has been prepared in recognition of the fact that, although certain functional elements of distributed building services cabling can be co-located with those of other generic cabling infrastructures, they can be

a) specified, installed and operated by different entities than those responsible for other generic cabling infrastructures that are installed within the premises,
b) specified and installed at a different time than other generic cabling infrastructures that are installed within the premises.

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.

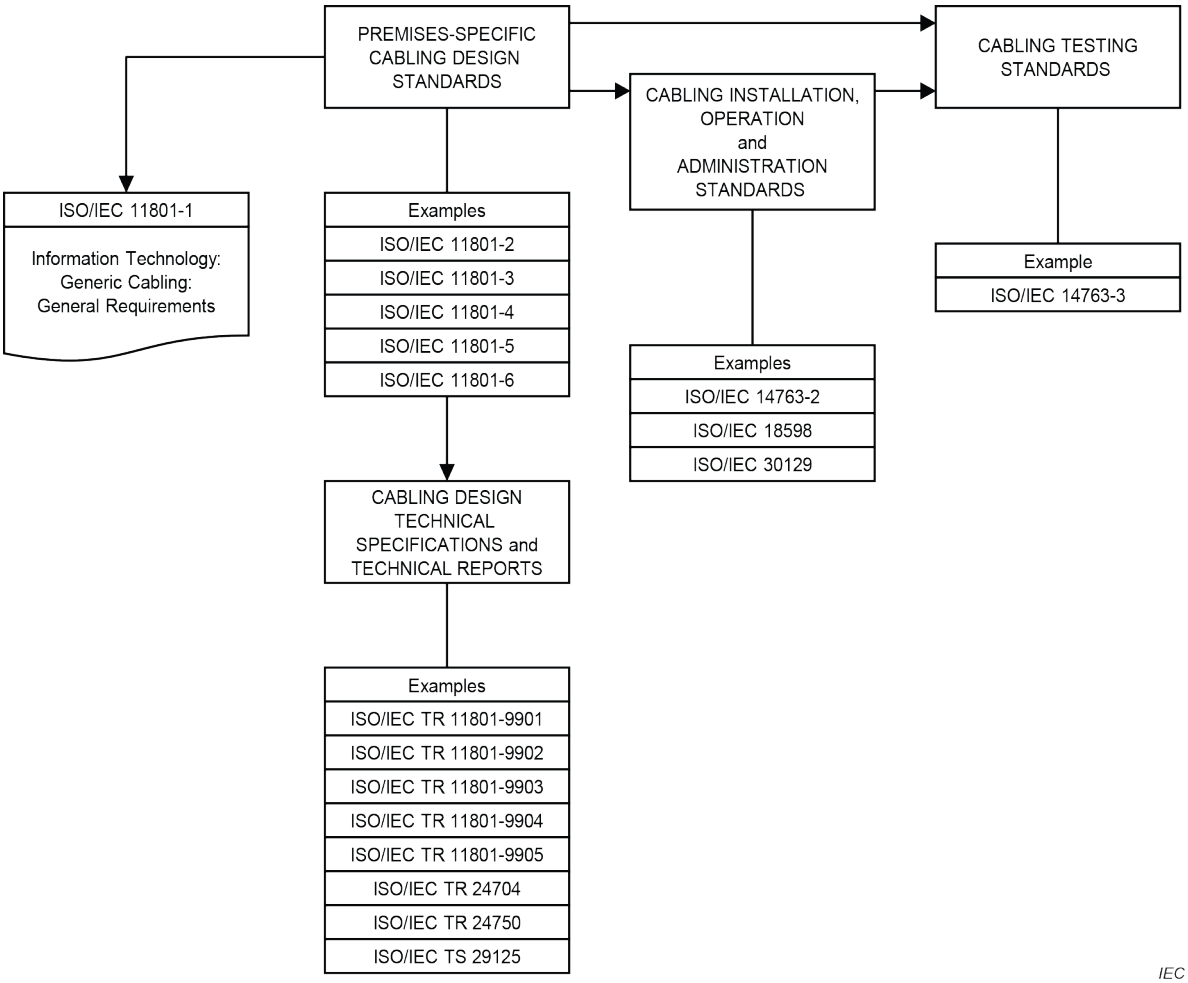


Figure 1 – Relationships between the generic cabling documents produced by ISO/IEC JTC 1/SC 25

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.

Applications addressed in this document include, but are not limited to those applications in ISO/IEC 11801:2017, Annex E, as used to support the following services:

1) telecommunications, e.g. wireless access points, distributed antenna systems;

2) energy management, e.g. lighting, power distribution, incoming utility metering;

3) environmental control, e.g. temperature, humidity;

4) personnel management, e.g. access control, cameras, passive infra-red (PIR) detectors, time and attendance monitoring, electronic signage, audio-visual projectors;

5) personal information and alarms, e.g. paging, patient monitoring, nurse call, infant security;
6) intelligent building systems;
7) communications between devices (i.e. “internet of things”).

Physical layer requirements for the applications listed in ISO/IEC 11801-1:2017, Annex E 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

- 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,
- adopts balanced cabling channel and link Classes E_A, F and F_A, specified in ISO/IEC 11801-1:2017,
- adopts optical fibre cabling channel and link requirements as specified in ISO/IEC 11801-1,
- 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.

1 Scope

This part of ISO/IEC 11801 specifies generic cabling within premises that comprise single or multiple buildings on a campus. It covers balanced cabling and optical fibre cabling.

This document has been prepared to reflect the increasing use of generic cabling in support of non-user specific services and the sharing of information between such services that can also incorporate the supply of power, including

1) telecommunications, e.g. wireless access points, distributed antenna systems,
2) energy management, e.g. lighting, power distribution, incoming utility metering,
3) environmental control, e.g. temperature, humidity,
4) personnel management, e.g. access control, cameras, PIR detectors, time and attendance monitoring, electronic signage, audio-visual projectors,
5) personal information and alarms, e.g. paging, patient monitoring, nurse call, infant security,
6) intelligent building systems.

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

a) the structure and configuration for generic cabling for distributed building services,
b) the interfaces at the service outlet (SO),
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 (e.g. electrical safety and protection, fire) 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.

ISO/IEC 11801-1:2017, *Information technology - Generic cabling for customer premises - Part 1: General requirements*
ISO/IEC 11801-1:2017/AMD1:2025

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*

Bibliography

IEC 61935-1, *Specification for the testing of balanced and coaxial information technology cabling - Part 1: Installed balanced cabling as specified in ISO/IEC 11801-1 and related standards*

IEC 61935-4, *Specification for the testing of balanced and coaxial information technology cabling - Part 4: Installed balanced single-pair cabling as specified in ISO/IEC 11801-1 and related standards*[1]

ISO/IEC 11801-2, *Information technology – Generic cabling for customer premises – Part 2: Office premises*

ISO/IEC 11801-3, *Information technology – Generic cabling for customer premises – Part 3: Industrial premises*

ISO/IEC 11801-4, *Information technology – Generic cabling for customer premises – Part 4: Single-tenant homes*

ISO/IEC 11801-5, *Information technology – Generic cabling for customer premises – Part 5: Data centres*

ISO/IEC TR 11801-9901, *Information technology – Generic cabling for customer premises – Part 9901: Guidance for balanced cabling in support of at least 40 Gbit/s data transmission*

ISO/IEC TR 11801-9902, *Information technology – Generic cabling for customer premises – Part 9902: End-to-end link configurations*

ISO/IEC TR 11801-9903, *Information technology – Generic cabling systems for customer premises – Part 9903: Matrix modelling of channels and links*

ISO/IEC TR 11801-9904, *Information technology – Generic cabling systems for customer premises – Part 9904: Assessment and mitigation of installed balanced cabling channels to support 2,5GBASE-T and 5GBASE-T*

ISO/IEC TR 11801-9905, *Information technology – Generic cabling systems for customer premises – Part 9905: Guidelines for the use of installed cabling to support 25GBASE-T*

ISO/IEC TR 11801-9911, *Information technology - Generic cabling for customer premises - Part 9911: Guidelines for the use of balanced single pair applications within a balanced 4-pair cabling system*

ISO/IEC 14763-3, *Information technology – Implementation and operation of customer premises cabling – Part 3: Testing of optical fibre cabling*

ISO/IEC 18598, *Information technology – Automated infrastructure management (AIM) systems – Requirements, data exchange and applications*

ISO/IEC TR 24704, *Information technology – Customer premises cabling for wireless access points*

ISO/IEC TR 24750, *Information technology – Assessment and mitigation of installed balanced cabling channels in order to support 10GBASE-T*

ISO/IEC TR 29106, *Information technology – Generic cabling – Introduction to the MICE environmental classification*

[1] Under preparation. Stage at the time of publication: IEC CDV 61935-4:2025.

ISO/IEC TS 29125, *Information technology – Telecommunications cabling requirements for remote powering of terminal equipment*

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