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Information technology – Customer premises cabling for wireless access points

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INFORMATION TECHNOLOGY – CUSTOMER PREMISES CABLING FOR WIRELESS ACCESS POINTS

FOREWORD

1) ISO (International Organization for Standardization) and IEC (International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

2) In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

3) Attention is drawn to the possibility that some of the elements of this Technical Report may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

The main task of IEC and ISO technical committees is to prepare International Standards. In exceptional circumstances, a technical committee may propose the publication of a technical report of one of the following types:

- type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;
- type 2, when the subject is still under technical development or where, for any other reason, there is the future but not immediate possibility of an agreement on an International Standard;
- type 3, when the technical committee has collected data of a different kind from that which is normally published as an International Standard, for example ‘state of the art’.

Technical reports of types 1 and 2 are subject to review within three years of publication to decide whether they can be transformed into International Standards. Technical reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

ISO/IEC TR 24704, which is a technical report of type 2, was prepared by subcommittee 25: Interconnection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology.

This publication has been drafted in accordance with ISO/IEC directives, Part 2.

This document is issued in the type 2 technical report series of publications (according to 15.2.2 of the Procedures for the technical work of ISO/IEC JTC 1 (1998)) as a prospective standard for provisional application in the field of Customer Premises Cabling, because there is an urgent requirement for guidance on how standards in this field should be used.

This document is not to be regarded as an International Standard. It is proposed for provisional application so that information and experience of its use in practice may be gathered. Comments on the content of this document should be sent to IEC Central Office.

A review of this type 2 technical report will be carried out not later than three years after its publication with the option of extension for a further three years, conversion into an International Standard or withdrawal.

INTRODUCTION

This document specifies the use of generic cabling for customer premises, as specified in international standard ISO/IEC 11801, for connection to wireless access points. It is intended to guide new installations and renovations. The customer premises may encompass one or more buildings or may be within a building that contains more than one enterprise.

This Technical Report specifies an ISO/IEC compliant implementation methodology that enables connection to information and communications technology (ICT) equipment that is specifically deployed to provide a grid of wireless coverage areas within buildings. The cabling may be installed prior to the selection of specific equipment or the wireless application to be used.

International standard ISO/IEC 11801 specifies a structure and performance requirements for cabling subsystems that support a wide range of applications. It provides appropriate equipment interfaces to the cabling infrastructure in equipment rooms, telecommunications rooms and work areas.

A growing number of enterprises employ equipment at the “edge” of the network that rely on both physical connections to the cabling infrastructure at the work area, while also having the ability to maintain untethered network access at other locations. This Technical Report was created because the infrastructure specified in cabling standard ISO/IEC 11801 does not specifically cover infrastructure for connections to wireless access points. Supplementary information is provided here on the number of outlets and outlet placement for wireless access points that may optionally receive both power and information transfer through the IT cabling.

This Technical Report specifies a cabling system infrastructure based upon balanced and optical fibre cabling that provides:

- users with requirements for a supplemental cabling infrastructure that enables reliable deployment of wireless ICT equipment without the costs associated with the installation of additional IT or mains power cabling,

- users with a flexible cabling scheme such that changes to the wireless access points are both easy and economical;

- building professionals (for example, architects) with guidance for accommodating cabling before specific requirements are known, i.e. in the initial planning either for construction or refurbishment;

- industry and applications standardization bodies (for example ITU-T, ISO/IEC JTC 1/SC 6, ISO/IEC JTC 1/SC 25/WG 1, IEC TC 100) with a cabling system that supports current products and provides a basis for future product development;

- users, designers, and manufacturers of wireless access points with advice on interfacing to the generic cabling;

- suppliers of cabling components and installers of cabling with relevant requirements.

A number of wireless applications have been analysed to determine the requirements specified herein. Propagation of microwave energy indoors is complex and the operating range of communications devices will depend on carrier frequency, transmission power, building geometry and materials. Consult the application standard and equipment manuals for guidance on factors that should be taken into account during design of the wireless grid and prior to deployment of wireless access points.

1 Scope

The cabling specified in this Technical Report is considered to be in addition to and not in place of the infrastructure specified in ISO/IEC 11801. This Technical Report specifies a customer premises cabling system infrastructure for an array of coverage areas that form a wireless network grid within a building. It is applicable to all of the balanced and optical fibre cabling classes specified in ISO/IEC 11801.

This Technical Report specifies design and configuration of an ISO/IEC 11801 compliant horizontal cabling subsystem. Requirements and guidelines are provided with respect to

a) minimum configuration, structure and topology,

b) performance requirements for permanent links and channels,

c) coverage and location of telecommunications outlets,

d) interfaces to wireless access points,

e) power delivery over balanced cabling.

While placement and security of wireless access points are outside the scope of this Technical Report, placement of telecommunications outlets (TOs) is specified to enable flexible deployment of wireless services.

Safety (electrical, fire, etc.) and electromagnetic compatibility (EMC) requirements are outside the scope of this Technical Report.

2 Normative references

The following referenced documents are indispensable for the application of this document. The latest edition of the referenced document (including any amendments) applies.

ISO/IEC 11801, *Information technology – Generic cabling for customer premises*

ISO/IEC 14763-1, *Information technology – Implementation and operation of customer premises cabling – Part 1: Administration*

ISO/IEC 18010, *Information technology – Pathways and spaces for customer premises cabling*