ISO/IEC JTC 1/SC 25 N 2544

Date: 2016-03-10

Replaces ISO/IEC JTC 1/SC 25 N/A

ISO/IEC JTC 1/SC 25
INTERCONNECTION OF INFORMATION TECHNOLOGY EQUIPMENT
Secretariat: Germany (DIN)

DOC TYPE:	**Outgoing Liaison**
TITLE:	**Liaison to IEEE 802.11 on Wireless Access Points**
SOURCE:	**Convenor SC 25/WG 3**
PROJECT:	**ISO/IEC 11801-6**
STATUS:	**Liaison to IEEE 802.11 as approved by SC 25/WG 3 at its spring 2016 meeting**
ACTION ID:	**SC 25 to note**
DUE DATE:	**n/a**
REQUESTED ACTION	
MEDIUM:	**open**
DISTRIBUTION:	**ITTF, JTC 1 Secretariat** **P-, L-, O-Members of SC 25** **SC 25 PTT**
No of Pages:	**4** (including cover)

Secretary - ISO/IEC JTC 1 / SC 25 – Juergen Tretter
tretterconsult@gmail.com Tel.: +49/6333 993796

ISO/IEC JOINT TECHNICAL COMMITTEE 1
SUBCOMMITTEE No.25: INTERCONNECTION OF
INFORMATION TECHNOLOGY EQUIPMENT
WORKING GROUP 3: CUSTOMER PREMISES CABLING

To: Mr Adrian P. Stephens, Chair IEEE 802.11, adrian.p.stephens@intel.com

CC: David Law, Chair IEEE 802.3, dlaw@hp.com
Alan Flatman, Liaison Officer, a_flatman@tiscali.co.uk
Gilles Thonet, IEC/CO, gth@iec.ch

Subject: Liaison from ISO/IEC JTC 1/SC 25/WG 3 on ISO/IEC 11801-6

Dear Mr Stephens,

we would like to draw your attention to cabling recomendations for Wireless Access Points (WAP), planned to be contained in the next edition of ISO/IEC 11801-6. WAP cabling is in the form of an in-ceiling grid with recommended dimensions depending upon the technology being supported. BASE-T links are anticipated in the majority of cases in order to provide PoE support, although optical fibre Ethernet links may also be used. A copy of the proposed text is attached for information.

ISO/IEC 11801-6 “Information technology - Generic cabling for customer premises - Part 6: Distributed Building Services” will specify cabling for Wireless Access Points previously published in our ISO/IEC TR 24704:2004 “Information technology -- Customer premises cabling for wireless access points”.

Any advice to improve the information provided will be greatly appreciated.

Sincerely,

Prof. Dr.-Ing. Albrecht Oehler
Convenor ISO/IEC JTC 1/SC 25 WG 3

A.3 Telecommunications – Wireless networks

A.3.1 General

A.3 is applicable to, but not restricted to, the wireless applications listed in Table A.2.

Table A.2 – Supported wireless applications

Application	Standard Description	Typical indoor range (radius)
IEEE 802.11	Wireless Local Area Networks (2 Mbit/s at 2,4 GHz or infrared)	30 m
IEEE 802.11a	Wireless Local Area Networks (54 Mbit/s at 5 GHz)	12 m
IEEE 802.11b	Wireless Local Area Networks (11 Mbit/s at 2,4 GHz)	30 m
IEEE 802.11g	Wireless Local Area Networks (54 Mbit/s at 2,4 GHz)	12 m
IEEE 802.11n	Wireless Local Area Networks (600 Mbit/s at 2,4 and/or 5 GHz)	12 m
IEEE 802.11ac	Wireless Local Area Networks (7 Gbit/s at 5 GHz)	12 m
DECT	Digital European Cordless Telephony (1 Mbit/s at 1,8 GHz)	50 m
Bluetooth II	ISM Band 1 Mbit/s at 2,4 GHz	up to 10 m

Certain proprietary wireless equipment has a typical indoor range less than 12 m.

A.3.2 SO distribution to support wireless access points

Wireless access points connected to an SO provide an interface to two distinct networking applications:

a) an application supported by the cabling, as detailed in ISO/IEC 11801-1;

b) a wireless application serving a specific area.

Operating range performance prediction provides valuable input for the determination of SO locations and should be performed and taken into account in the design of the service distribution cabling subsystem. Similarly, a site survey should be performed prior to location selection and installation of wireless access points.

Where multiple wireless access points or wireless access points with multiple interfaces are located to provide coverage areas that serve the same building space (e.g. to provide additional bandwidth or redundancy), it is necessary to provide multiple service distribution cabling channels to the SOs. During planning, consideration of a logical boundary between areas served from different service distributors should be considered. For example, such a boundary may be at a fixed structural boundary within the building or at areas that do not require coverage.

As shown in Figure A.3:

- SOs that serve coverage areas in a uniform open space should be located to support a “honeycomb” or hexagonal wireless grid geometry;
- the number and placement of SOs should enable connections to a coverage area grid based on a maximum coverage area radius of 12 m;
- SOs should be centrally located in their associated coverage areas.

A "honeycomb” grid provides the most efficient coverage. Other grid shapes, such as squares or rectangles may be used.

Ceiling height should be considered when designing the coverage area grid to be served by the horizontal cabling. For example, placement of wireless access points on ceilings that exceed a 3 m height may result in a lower coverage area radius at floor height.

If the antenna for the wireless access point is installed above the ceiling, the signal attenuation of the ceiling material can affect the coverage area. This effect should be considered when sizing the grid.

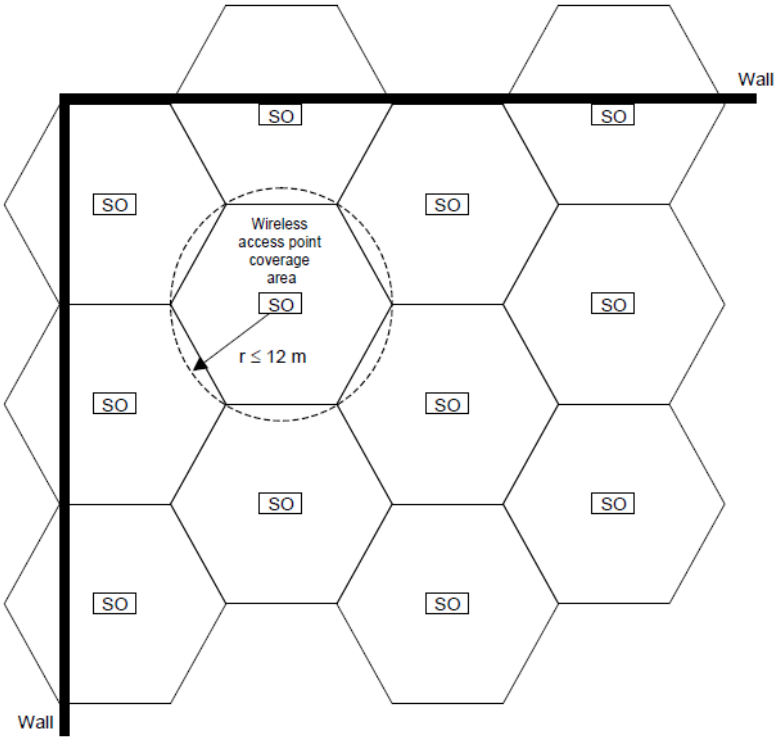

Figure A.3 – Wireless application coverage area grid