ISO/IEC JTC 1/SC 25/WG 3 N 823

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ISO/IEC JTC 1/SC 25/WG 3

Customer Premises Cabling

Secretariat: Germany (DIN)

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TITLE:	**Liaison report from ISO/IEC/JTC 1/SC 25/WG 3 to IEC TC 64 and IEC TC 108 on protection of the information technology cabling system from overheating with copy to IEEE 802.3, IEC SC 46C, IEC SC 48B**
SOURCE:	**ISO/IEC JTC 1/SC 25/WG 3 (Kona 71A)**
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DUE DATE:	**N/A**
REQUESTED:	**to IEC TC 64 and IEC TC 108 for consideration**
ACTION	**to IEEE 802.3, IEC SC 46C, IEC SC 48B and SC 25/WG 3 for information.**
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DISTRIBUTION:

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Secretary - ISO/IEC JTC 1 / SC 25/WG 3 - Dr.-Ing. Walter P. von Pattay
ZVEI FV 7 & FV 8, Germany
Tel.: +49/89/923 967 57, Tfx,: +49/89/923 967 59 (on request only)
EM: Walter@Pattay.com

Home page SC 25: ”http:/www.iec.ch/sc25”

Liaison report from ISO/IEC/JTC 1/SC 25/WG 3 to IEC committees responsible for electrical safety on protection of the information technology cabling system from overheating

To: IEC TC 64 and IEC TC 108

From: ISO/IEC JTC 1/SC 25/WG 3

42nd Meeting of WG 3

Keauhou near Kona, USA, 2007-02-26/03-02

Copy to IEEE 802.3, IEC SC46 and IEC SC 48B

Date: 2007-03-06

Re: Protection of the information technology cabling system from overheating

Request to IEC committees responsible for electrical safety

ISO/IEC JTC 1/SC 25/WG 3 has received several liaison requests from IEEE 802.3at to develop telecommunications cabling specifications for the support of the Power over Ethernet Plus (PoEP) application. One of the requests is to specify a higher current capacity for balanced (twisted pair) cabling than presently specified in ISO/IEC 11801, see below.

ISO/IEC JTC 1/SC 25/WG 3 has done some preliminary modeling and measurements that indicate that such higher currents may lead to a temperature rise in bundled cable configurations that exceed the temperature rating of the cables, that is 60 °C, when operated above 45 ^{o}C ambient temperature. Accordingly, WG 3 thinks it is prudent to co-operate with IEC committees responsible for electrical safety to develop current capacity capabilities for bundled information cables. This may require an amendment to an existing standard (e. g. IEC 60950, Clause 6.3), or the creation of a new document. Since this is a safety related issue, ISO/IEC JTC 1/SC 25/WG 3 thinks it is outside its scope and therefore kindly asks IEC TC 64 and TC 108 to either provide ISO/IEC JTC 1/SC 25/WG 3 with a reference that specifies the envisaged usage of information cabling or to develop an appropriate standard. ISO/IEC JTC 1/SC 25/WG 3 would like to work with the IEC committees responsible for electrical safety on these issues and provide them with all the information that tey may need for this project.

ISO/IEC JTC 1/SC 25/WG 3 looks forward to co-operate with IEC TC 64 and TC 108 to develop safety and cabling standards that will enable and support this important new application from IEEE 802.

Current status in ISO/IEC 11801

ISO/IEC 11801 presently specifies channels for information that consist of 4 balanced pairs with a conducter diameter of 0,4 to 0,8 mm for solid conductors

1) Conductor diameters below 0,5 mm and above 0,65 mm may not be compatible with all connecting hardware.

Have a mating interface at the Telecommunications outlet accessible to the laymen according to IEC 60603-7 and provide the following power performance:

6.4.9 Current carrying capacity

The minimum current carrying capacity for channels of Classes D, E and F shall be 0,175 A d.c. per conductor for all temperatures at which the cabling will be used. This shall be achieved by an appropriate design.

6.4.10 Operating voltage

The channels of classes D, E and F shall support an operating voltage of 72 V d.c. between any conductors for all temperatures at which the cabling is intended to be used.

6.4.11 Power capacity

The channels of classes D, E and F shall support the delivery of a power of 10 W per pair for all temperatures at which the cabling is intended to be used.

ISO/IEC JTC 1/SC 25 Secretary would appreciate

- to receive a confirmation whether and when IEC TC 64 and/or IEC TC 108 will provide appropriate answers,
- to know whether they see safety issues associated with that application that go beyond the overheating of cables that are installed in a fixed way, e.g. cords or connectors disconnected under load and
- what information IEC TC 64 and/or IEC TC 108 would additionally need to develop appropriate (an) answer(s).