SC65C/JWG10

INTERNATIONAL ELECTROTECHNICAL COMMISSION

TC65: INDUSTRIAL PROCESS MEASUREMENT, CONTROL AND AUTOMATION

SC65C: INDUSTRIAL NETWORKS

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TITLE:	Liaison requested from IEC TC65/SC65C/JWG10
TO:	IEEE 802.3 on Power over Ethernet performance in industrial environments.
SOURCE:	SC65C Secretary, Mr Bernard Dumortier
PROJECT:	IEC 61918: Installation of communications networks in industrial premises
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From: IEC SC65 SC65C JWG10 [*Approved at the 18th meeting Nice, France on 2009-03-06*]

Date: 15 May 2009

Subject: Expected performance of Power over Ethernet when used in industrial applications.

1. At the recent meeting of IEC SC65C JWG10, members reported cases where Ethernet field devices have been damaged by unexpected release of power from PSE source entities.

   The causes of these problems are not clear. However it seems that the PSE and remote field device have correctly implemented 802.3.

   One possible explanation is that the PSE "probing & classification" procedure gave wrong results because the industrial site had high levels of noise on the line, and the outcome was incorrect release of power and damage to the connected device.

   Has IEEE had any similar reports?

   Have IEEE members reported any testing or evaluation of expected performance of the PoE "probing & classification" procedure when used in noisy environments?

   What are the IEEE recommendations or guidance to avoid damage to vulnerable PD's when used in noisy environments such as MICE E_2 and E_3?

2. A related topic raised by members of JWG10 is the bit error rate performance of a normal 802.3 communication channel when the channel is also providing PoE to a switching inductive load such as a solenoid or motor starter that regularly changes state with consequent transients in the power demand.

   What are the expected bit error rates for normal Ethernet signals during such transients in PoE demand on the same or adjacent pairs?

   What recommendations are proposed to mitigate any anticipated problems?

We look forward to your guidance in these areas.

Russo

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